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THE INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH,

SKETCH

OF THE

MEDICAL HISTORY OF THE NATIVE ARMY OF BOMBAY,

FOR THE

YEAR 1872.

EXTRACTED FROM THE ANNUAL RETURNS, FROM THE REPORTS OF REGIMENTAL MEDICAL OFFICERS,
AND FROM THE INSPECTION REPORTS OF DEPUTY SURGEONS GENERAL.

[ALL STATISTICAL INFORMATION IS GIVEN IN THE TABLES AT THE END.]

COMPILED IN THE OFFICE OF THE SURGEON GENERAL, INDIAN MEDICAL DEPARTMENT (BOMBAY).

Bombay:

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THE INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH,

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FROM THE INSPECTOR GENERAL OF HOSPITALS,
Indian Medical Department,

TO THE SECRETARY TO GOVERNMENT,
Military Department.

Bombay, 31st May 1873.

SIR,—I have the honour to forward, for submission to His Excellency the Governor in Council, the Medical History of the Native Army for the year 1872.

Year.	Strength.	Admis- sions.	Death in and out of Hospital.	Percentage of sick.
1871	22,959	29,733	333	4.31
1872	22,903	36,209	321	4.54

2. The strength of the army during the year has been nearly the same as in 1871, there being a decrease of 56 in 1872 as compared with the previous year.

3. The admissions during the year have increased by 6,476 over those of 1871; there has been a decrease in the number of deaths by 12.

4. The average death rate of the whole army is 1.4 per cent. to average strength, or 14 per thousand. In 1871 the percentage was 1.45 or 14.5 per thousand; in 1870, 1.26 per cent. or 12.6 per thousand.

5. The average daily sick is a little more than $4\frac{1}{2}$ per cent. (4.54) of the average strength.

6. The admissions, 36,209, compared with the strength, 22,903, give a percentage of 158.09; so that of a strength of 100 men, the whole of them will have been in hospital once, and 58 of them twice. This illustration gives only a rough idea of the extent of sickness; actual experience showing that a few men escape altogether, and that a few others go more frequently to hospital—in some cases three, four, or even five times.

7. Fever is always the principal cause of sickness; but during 1872 in some regiments it had a rival in “dengue” which disease supplied 4,364 cases for treatment.

8. Following the plan adopted on previous occasions, it will be convenient to notice the health of the army as it has been reported upon by the Medical Officers and Deputy Inspectors General of the various Circles of Medical Superintendence.

Presidency Division.

9. To this Circle Aden has been added during the year, on the abolition of the appointment of Medical Superintendent at Aden.

The health of the troops generally has been of an average kind. The special exceptions are to be found in the 26th N. I. at Surat, the wing of the 15th N. I. at Tanna, and the Aden troop, at Aden.

10. The 26th N. I. arrived at Surat from Nusseerabad in the early part of the year, this change having been necessitated by the sickly condition of the corps at the latter station.

After recovering from the fatigue of the march, and on beginning to experience the benefit of a change near the coast, it became temporarily crippled again by a severe epidemic of dengue. This disease and ague rendered the regiment unhealthy for two months, but its general health has much improved since the autumn.

11. The wing of the 15th N.I., at Tanna, suffered both from dengue and intermittent fever, whilst the sickness in the Aden troop was principally malarious fever.

12. The largest death rate in this Division, excluding small detachments, was 15·6 per thousand in the 26th Regiment N.I.

Poona Division and Southern Maratha Circle.

Year.	Strength.	Admissions.	Deaths.
1871	8,483	10,114	46
1872	8,577	10,703	51

13. There is an increase in the strength of 94 in this Division compared with 1871, and there is an excess of 589 in the admissions and of 5 in the number of deaths over the previous year.

14. The increase in the number of admissions is fully explained by the presence of dengue; cholera and smallpox also prevailed as epidemics in the Poona and Belgaum Districts, and a few cases of each disease occurred amongst the troops. The highest mortality occurring in this Division, 12 per thousand of strength, in 2nd Grenadiers, Poona, and 28th N.I., Sholapur, was below the average of the whole army (14 per thousand).

Northern and Mhow Divisions.

Year.	Strength.	Admissions.	Deaths.
1871	8,077	11,425	87
1872	8,054	15,735	68

15. In these Divisions, with a difference of only 23 in the strength, there were 4,310 more admissions, whilst there were fewer deaths by 19 in 1872 than in 1871.

16. The most sickly regiment was the 24th N.I., at Deesa, which with a strength of 619 had 2,086 admissions. The 23rd Regiment N.I. at Nusseerabad comes next in order with a strength of 626, having 1,891 admissions; and the wing of the 25th Regiment N.I. at Mehidpur has nearly the same proportional amount of sickness, having 910 admissions, with a strength of 311.

17. The mortality *in and out* of hospital was as follows:—

Wing 25th Regiment N.I., 28·9 per thousand.
 „ 24th Regiment N.I., 25·8 do.
 „ 23rd Regiment N.I., 15·9 do.

The 4th Regiment at Baroda had the lightest death rate in this Division 1·5 per *mille*.

Sind District.

18. Comparing 1871 with 1872, there has been a decrease of 112 in the strength, an increase of 1,061 in the number of admissions, and of 17 in the number of deaths. The 27th and 29th Regiments have had more sickness, and a heavier mortality this year than in 1871, but the 27th preserves a marked superiority in health status over the companion Belooch Regiment.

Year.	Strength.	Admissions.	Deaths.
1871	3,087	3,979	57
1872	2,975	5,040	74

19. I regret to observe that the health of the Jacobabad Garrison continues indifferent, and the mortality considerable.

Year.	Strength.	Admissions.	Deaths.
1871	1,770	2,906	60
1872	1,655	2,922	71

The figures show that there have been more admissions and a larger number of deaths in the past than during the previous year.

20. It is not easy to judge of the exact amount of sickness in this garrison, from the fact that soldiers, unless very ill indeed, are permitted to remain in their lines, and do not come to hospital, and so under the cognizance of the Medical Officer, at all.

21. But the mortality of the whole garrison in and out of hospital, which in 1871 was 33·9 per thousand of strength, rose this year to 42·9 per thousand; the death rate of the whole Bombay Army being 14 per thousand.

22. These figures are much larger than any before exhibited, and in looking over the report of the Sanitary Commissioner with the Government of India for 1871, Section II., Native Troops, I find the highest death rates at individual stations given are 26·12 per *mille* at Kohat, epidemic cholera being present; and 25 per *mille* in Cachar, 8 out of 36 being killed in action. But of individual regiments the death rate of some of the Panjab regiments approximate to those of the regiments at Jacobabad. The highest death rate in Bengal (4th N.I. on the Eastern Frontier) being 50 per thousand, due to loss in action and exposure in the field, and in Bombay 53·6 per thousand in the 1st Regiment Sind Horse.

23. No doubt a part of this great mortality of the Sind Frontier Garrison, arises from the peculiar and sometimes arduous nature of its duty.

24. For example, the report of the 30th Regiment N.I. contains the history of a detachment 86 strong under a European officer, marching from Jacobabad to Kelat in the month of June. It is stated that 26 of the men were attacked on the third day's march—a severe one of 32 miles through the desert—with symptoms of heat apoplexy. Three men died on the day of attack, one a few days after, three died at Kelat, and one man died suddenly after return to Jacobabad. So that in this case there is a mortality of 8 out of 86 men, or 9·3 per cent. directly traceable to exposure on duty.

25. Besides this immediate result there is every reason to suppose that the whole of the men who went through, what the Medical Officer without exaggeration calls this “dreadful journey,” will suffer in many ways in health status, and will be less able to resist the active causes of disease, which are so powerful at Jacobabad.

26. These causes are mainly attributable to the insanitary condition of the

Year.	Strength.	Cases of Malarious Fever.	No. of Deaths.	Cases of Diseases of Lungs.	No. of Deaths.
1871	1,770	1,551	13	149	23
1872	1,655	1,749	14	115	23

camp, producing excessive malaria in the autumn, and diseases of the lungs in the cold weather. The number of cases is not so striking when compared with other regiments and stations, but the mortality, both from fever and diseases of the lungs, is the highest in this presidency.

27. The present climate of Jacobabad is essentially artificial, the work of years of civilized occupation.

The place was originally a very small oasis, surrounded by a desert of sand, with a dry parching climate, water being obtainable at a considerable depth only, and with trees that might be summed up upon the fingers of both hands. Now the place is covered with trees numbered by thousands, and the soil is saturated with water from numerous canals.

28. Trees and water are both valuable in a sanitary point of view, and are conducive to health and comfort, but they require constant attention to prevent an over abundance of the one or an undue luxuriance of growth of the other, otherwise, instead of being conducive to health, they may predispose to disease.

29. I would beg to recommend a more vigorous attention to the sanitary requirements of the station, and that, if possible, the marching in June may be forbidden, except under the strongest political necessities.

30. *Epidemics*.—The year has been noticeable for an active and widespread epidemic of dengue.

31. Smallpox has also been present in a few regiments at Poona, Dharwar, and Ahmadnagar, and at some other stations in a less degree. The disease, owing to the generally protected state of the men, was of a mild kind. There were 94 cases and only 2 deaths.

32. Cholera was also present at Mhow, Sirur, Mehidpur, and other stations. Active measures were taken to segregate the patients, and at Mhow especially there is reason to think that the excellence of the arrangements prevented the spread of the disease into this large station.

33. Malarious fever is the great cause of sickness in the army. Of 37,072 cases of all kinds of disease treated during the year, 16,849 were from malarious fever.

34. Much interesting information will be found in the four appendices attached to this report, as well as in the general statement and summary, the principal points of which have been now passed in review.

I have the honour to be,

Sir,

Your most obedient servant,

A. WRIGHT,

Inspector General Indian Medical Department.

A SKETCH

OF THE

MEDICAL HISTORY OF THE NATIVE ARMY OF BOMBAY,

FOR THE

YEAR 1872.

[The Regiments are placed as they stood in the Army List on the 1st July 1872.]

PRESIDENCY DIVISION, ADEN, AND BOMBAY MARINE.

Average strength present during the year, Infantry.....	3,297
Average daily sick per cent. to the average strength	4·36
Ratio of mortality per cent. to the average strength	0·24

DETACHMENT 11TH REGIMENT NATIVE INFANTRY.

BOMBAY.—In Medical charge of Surgeon H. WAKEFIELD ; Strength 158.

Average strength of the detachment during the past year was 158·3.

Admissions 140. Of these 122 were discharged as cured. Eleven were allowed sick certificate. Four re-admitted for other diseases. Four were invalided. The daily average of sick 5·9. One death during the year.

The detachment of H. M.'s 11th Regiment Native Infantry has been under my charge since the 26th of September, and left in November for Poona and returned in December.

Nothing worthy of special notice has occurred. The European Officer Commanding proceeded on sick certificate. The havildar died of bronchitis ; he had been thirty years in the service, and was old and worn out. The detachment was removed from their old lines adjoining the 19th Regiment's lines on account of the unhealthy situation.

H. M.'s 19TH REGIMENT NATIVE INFANTRY.

BOMBAY.—In Medical charge of Surgeon H. WAKEFIELD ; Strength 630.

Average strength of the regiment during the past year was 630. Admissions 667 ; of these 627 were discharged as cured, twenty-three were allowed sick certificate, six re-admitted for other diseases, twenty-five were invalided, the daily average of sick, 2·06, six deaths during the year, the admissions were less by 206. One hundred and ninety-eight admissions were on account of fever, of these four died. They were mostly men of weakly constitution, and would not, as Purdesees, submit to any proper or strengthening diet.

Hypodermic injection of quinine was tried very frequently ; in some cases it seemed to act most beneficially, but in others it had no marked benefit over the ordinary way of administering quinine. Several cases remained in hospital for a long time, showing but gradual improvement with frequent relapses, to be attributed to the impure state of the atmosphere surrounding the hospital and neighbourhood ; patients frequently suffered from diarrhoea and vomiting, when the stench from Sonapoor drain was intense, and the wind blowing direct.

Small-pox first showed itself in the beginning of the year, and lasted on till August. Twenty-five cases were admitted, including women and children, two cases proved fatal. On the appearance of this epidemic, the men were ordered under canvas, and there remained till 11th of March. In the meantime the lines had been thoroughly cleaned ; the cases were treated in the pendals given over for that purpose. Measles and chicken-pox were also prevalent at the same time as the above—two children of about a month old succumbed.

Twenty-two cases of mumps contributed to the number of admissions.

Chronic Rheumatism.—Mostly the old men ; show 39.

Syphilis.—Ten of primary and two of secondary, were treated.

Leprosy.—One case—this man was re-admitted for treatment three times, and was at last invalided.

Scurvy.—Thirty-three cases were admitted, but many more were treated as out-patients. It has been more or less prevalent throughout the year, but during December it was much more general. There are many causes as to which this complaint may reasonably be attributed ; the chief are the impure state of the atmosphere surrounding the lines, and the indifferent food taken : the men are mostly those of Purwaree caste, and are the principal sufferers ; they are chiefly married with large families.

Conjunctivitis.—Eighteen admissions treated in a separate ward ; bronchitis—13 were admitted ; 2 of pneumonia—one cured, and the other left on sick certificate.

Three of phthisis, one died on sick certificate, one returned, but obtained furlough.

There are twenty-two cases of dysentery treated. One case proved fatal, of Bhat caste, he was under treatment for one month, but gradually sunk from exhaustion, as he could not be prevailed on to change his diet. The treatment has mostly consisted of large doses of ipecacuanha.

Diarrhœa.—Twenty-three cases were treated. During July it was more prevalent and severe, and was very similar to cholera and would have no doubt lapsed into this, had care not been taken to keep remedies in the lines, with stringent orders for a report at once on those attacked. The lines were visited by the Hospital Assistant and myself daily. The treatment consisted of salines, of effervescing medicines with ammonia, and when the vomiting and purging had been controlled, small doses of castor oil with tincture opii administered.

Peritonitis.—Only one admission and this proved fatal. He was under treatment for only a few hours, and no direct cause could be traced of its origin.

Gonorrhœa has furnished 17 cases, chiefly confined to the Punjab and Sind recruits : all were soon cured.

Abscess.—Twenty-nine cases were treated confined to the extremities, and none of a serious character.

Guinea-worm.—Eight cases—only four suffered as they were all re-admitted : all residents of the Koncan, and had lately joined the regiment.

Contusions.—Sixty-six were under treatment, caused by bad fitting shoes and bruises from the rough and irregular state of the roads in the lines—large stones protruding—and it is wonderful that so few men are hurt, considering they walk about in the dark without protection, it being quite impossible to see the stones alluded to.

The health of the regiment during the past year has certainly improved.

H. M.'s 21ST REGIMENT NATIVE INFANTRY.

BOMBAY.—In Medical charge of Surgeon Major J. MILLS ; Strength 563.

The sickness in the regiment has been somewhat in excess of that in 1871, the treated having been 502 from a strength of 563 or 89·1 per cent. against 465, from 575 or 80·8 per cent. ; but the average duration of each case has been less, the daily average for 1872, being 19 against 20 in 1871, while the deaths have been only 3 or 0·5 to strength, 0·6 to treated against 1·4 and 1·7, respectively, in 1871.

Of the 502 treated, 28 remained in hospital on the 1st January and 474 were admitted ; of these 409 were discharged to duty, 3 died, 37 were sent on sick certificate, 38 were invalided, and otherwise discharged, and 15 remained in hospital on the 31st December.

Prevailing diseases have been ague 153, rheumatism 35, scurvy 17, bronchitis 24, diarrhœa 21, boil 36, contusion 33.

Ague.—One hundred and forty-four cases have been admitted or 30·4 per cent. of the whole, a much smaller number than in 1871 when they constituted 42·5 per cent. of the admissions, while, in the greater number of cases, the disease has been of the ordinary mild form ; in some it has been most obstinate, and its complication with scorbutic diathesis appears to aggravate it and render it most difficult for the patient to recover strength, leaving him liable to frequent recurrences. In several cases every means has been tried in vain. Quinine, in large and small doses, alone, combined with antiscorbutics, given by the mouth, and subcutaneously, beberine, arsenic, iron, all have failed, and as a last resource these men were sent to their native country—13 have gone on sick certificate. Subcutaneous injection of quinine has

sometimes proved most effectual in checking the accessions of fever; but, as mentioned by Surgeon-Major Gilbert in his report for 1871, the formation of sloughing ulcers at the point of injection forms a great objection to this mode of treatment. I am inclined to think that this tendency to suppuration and ulceration is particularly developed in patients with scorbutic taint.

Rheumatism is one of the diseases which gives most trouble in native regiments. It is so easy to feign pain, and so difficult to say positively that it does not exist, that it is one of the most common forms of malingering; but many cases occur where the scorbutic taint so marks the disease that there can be no doubt of its existence; these cases are marked by swelling of the joints, hardening of the muscles with contraction of the flexors; they are generally very obstinate, and seem to be best treated by the combination of iodide of potassium with chlorate of potash, lime-juice, &c. Occasionally cases of general arthritic rheumatism with a considerable amount of fever occur, and these, I find, yield most readily to alkaline treatment, with the use of woollens, the patient not being allowed to use any other kind of clothing.

Scurvy.—Seventeen cases were treated, under this heading, besides several that were treated under the head of rheumatism. 10 have been discharged to duty, 4 sent on sick certificate, 1 invalided, and 2 remain. Both among the men and families, there has been a strong tendency to scurvy, the principal cause of this seems to be that the men, to live as cheaply as possible, eat a great deal of stale fish and very little vegetables; but it seems probable that the tainted atmosphere so often prevailing in the lines, and caused by the Sonapoor drain, may have some influence in producing an unhealthy condition of the blood.

Bronchitis.—Twenty-four cases have been treated, of which seven remained from 71, and 17 were fresh admissions; of these one complicated with heart disease died, 11 returned to duty, 3 were sent away on sick certificate, 7 were invalided, and 2 remain under treatment.

Diarrhœa.—Twenty-one cases were admitted, none proved fatal, and there is nothing particular to remark about them.

Dysentery.—Nine cases were treated, all of an ordinary character.

Boils and Contusions.—Thirty-six of the former and 33 of the latter have been treated, the latter comprise the cases commonly known as shoebite, a most troublesome complaint in native regiments; for the native foot, unaccustomed to confinement, would be easily galled by the best-fitting shoe, and, of course, suffers still more readily from such shoes as the sepoys wear; but the admissions from this cause are often unnecessarily numerous, as if treated at once with simple dressing and sticking plaster, the necessity for admission into hospital may very frequently be obviated.

There has been no cholera in the regiment during the year.

During the month of May, 3 cases of small-pox were treated in the Esplanade pendalls: of these, 2 recruits recovered, one child died.

Vaccination has been carefully carried on during the year: 292 operations have been performed; of these 92 were primary, 72 successful, 20 unsuccessful; and 200 were re-vaccinations, 50 successful, 150 unsuccessful.

Deaths.—Three occurred in the hospital: 1 from remittent fever, the only case of the disease during the year, 1 from bronchitis complicated with heart disease, and 1 from pneumonia.

From the annexed table for the last 10 years it will be seen that the health of the regiment in 1872 has been above the average.

The lines of the regiment judged by their natural position and advantages should be healthy: fairly open on three sides, east, west, and south, near to the sea, and situated on a deep bed of porous sand, which rapidly carries off all surface waters, not allowing any stagnant pools to remain to produce malaria, the surface drainage well provided for, there ought not to be any malarious exhalation. And I do not think that there is anything that can be strictly so-called, but there are several circumstances that tend to neutralize these advantages. 1st, the houses of sepoys are very small, built apparently to accommodate a single man; when occupied by a married man with a family they are crowded to a dangerous degree; 2nd, the space between the rows of houses with the exception of the principal streets are too narrow; 3rd, the system of house drainage is objectionable, causing a mass of damp, often foetid, earth at the door of every hut. This drainage was the subject of an exhaustive report by Surgeon Seward in September last, addressed to the Commandant, Marine Battalion, and was also reported upon by a mixed Military and Medical Committee in November last, by whom a plan for its alteration and correction was suggested; 4th, there still remains the greatest perhaps of all the influences affecting the sanitary condition of the lines of the 21st Regiment. I allude to the noxious emanations from the Sonapoor drain. This has been so forcibly brought under

notice on previous occasions, that I should have thought it unnecessary to do more than mention it; but, unfortunately, no steps have been taken to remedy the nuisance by either Government or the Municipality, and it is undoubtedly growing worse and worse every year.

During the last two years it has been the subject of constant representations from the Esplanade Board of Health; and at the end of November the stench was for several days so intolerably offensive, that a special Medical Committee was appointed by the Brigadier-General to enquire and report upon the nuisance. From my own observation, having visited the outlet of the drain five times within the last month, I am satisfied that the stench arises from the deposit of insoluble sewage, brought down by the Sonapoor drain on the rocks and sands forming the foreshore of Back Bay, and though it might be modified in some degree by carrying the drain to the extreme limit of low water spring tides (60 or 70 yards beyond its present outlet), I believe that this would only be a slight palliation, and that the only complete remedy will be found in the diversion of the drain, and so preventing sewage from being carried into the quiet waters of Back Bay, where circumstances are so favourable for its retention, deposit, and exposure.

The water-supply is good in quality and quantity from the Vehar lake and wells.

The rainfall during the year was inches 81 and cents 95.

In the hospital a new ward has been formed by taking off 20 feet from that occupied by the lascars and details. A bathing-room is in course of construction in the east end of the north verandah, and a covered passage from the hospital to the latrines; these will be completed in a few days, and will be a material improvement to the hospital.

TABLE showing the number of Treated, Deaths, Strength, and Daily Average of sick in H. M.'s 21st Regiment N.I., or Marine Battalion during the 10 years, from 1863 to 1872.

		1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	Average.
Strength		519	581	625	568	569	625	658	633	575	563	591
Average Daily Sick		14	28	37	24	24	23	15	15	20	19	22
Treated	{ Cholera	6	21	13	...	...	...	...	...	...	...	4
	{ Other diseases...	474	798	938	758	755	787	515	403	465	502	640
	{ Total	480	819	951	...	...	...	...	...	...	...	644
,, to Strength	{ Cholera	1.1	3.6	2.4	...	...	...	...	...	...	...	.67
	{ Other diseases...	91.1	137.2	150.0	133.4	132.7	125.9	78.3	64.4	80.8	89.1	108
	{ Total	92.3	140.0	152.1	...	...	...	...	...	...	...	109
Deaths.....	{ Cholera	6	15	4	...	...	...	...	...	...	...	2.5
	{ Other diseases...	5	8	19	8	1	9	2	5	8	3	6.8
	{ Total	11	23	23	...	...	...	...	...	...	...	9.3
,, to Strength	{ Cholera	1.1	2.6	0.7	...	...	...	...	...	...	...	0.4
	{ Other diseases...	1.0	1.4	3.6	1.4	0.1	1.4	0.3	0.8	1.4	0.5	1.2
	{ Total	2.1	4.0	4.3	...	...	...	...	...	...	...	1.6
,, to Treated..	{ Cholera	100	71.4	30.7	...	...	...	...	...	...	...	62.5
	{ Other diseases...	1.0	1.0	2.0	1.0	0.1	1.1	0.4	1.2	1.7	0.6	1.0
	{ Total	2.3	28.0	2.4	...	...	...	...	...	...	...	1.4

DETAILS ATTACHED TO THE 21ST REGIMENT NATIVE INFANTRY.

BOMBAY.—In Medical charge of Surgeon-Major J. Mills; Strength 46.

The average strength during the year has been 46. Two remained in hospital at the close of last year, and 39 have been admitted, making a total treated of 41 or 89.1 per cent. Of these 26 have been discharged to duty, three have died, two were sent on sick certificate, nine were invalided or otherwise discharged, and one remains in hospital. A large number of the details are men sent from other regiments to appear before the invaliding committee, and many of these came into hospital during the months of November and December, at other times the numbers are very small.

Three deaths have occurred, one from idiopathic tetanus, one from cirrhosis of the liver, and one from phthisis and disease of the heart.

The principal disease treated has been ague, of which there have been 14 cases. One, a particularly obstinate one that had been sent from Rajkote to Hindoostan on sick leave, was away for nearly a year, came to Bombay on his way to Aden, was under treatment here for four months, and was at last brought before a special committee and invalided.

Two cases of leprosy occurred, both in men, who were invalided.

The details are quartered in the Esplanade pendalls, a tolerably healthy situation, but rather damp in the monsoon, at which time, however, there are seldom many of them in Bombay.

SANITARY REPORT OF THE SENIOR MEDICAL OFFICER ON THE HEALTH OF THE
NATIVE TROOPS IN THE BOMBAY GARRISON DURING THE YEAR 1872.

The troops in Garrison have been as follows :—

H.M.'s 19th Regiment N. I.	average strength.....	630
„ 21st do. N. I. or B. M. do.	.....	563
Detachment 11th do. N. I.	do.	158

Wings 17th and 26th Regiment N. I. were temporarily in Bombay during the visit of the Viceroy, but are not included in this report.

Total average strength 1,351

The health of the troops has not been quite as good as in 1871, itself an unhealthy year; for though the admissions have been 176 less, the strength has been also 247 less. The percentage of treated to strength has been 97·6 against 93·5 in 1871. The deaths have been ten, being a percentage of 0·71 to strength, and 0·75 to treated against 0·62 and 0·68 in 1871. The only improvement has been in the daily average sick of the 19th Regiment, which has fallen from 28·6 in 1871 to 20·6 in 1872. The detachment of the 11th Regiment has been much more unhealthy than in 1871, its admissions having been 143 from a strength of 158 against 103 from a strength of 177, and its daily average having risen from 3 to 5·9.

There has been no cholera among the troops, with the exception of one child of a sepoy of the 11th Regiment brought to hospital in a dying state in the month of July. But in October last, seven cases occurred in the lines of the lascars at Colaba, of which one was brought to hospital, and a tent was pitched near the Esplanade pendalls in which the man was treated. The case terminated fatally, as did all those that occurred in the lines. Surgeon Seward, then in medical charge of the Marine Battalion, visited the lines, and in his letter No 107 of 21st October 1872, to the Assistant Quarter Master General, Bombay District, reported very fully on their extremely unsatisfactory condition, and at his recommendation stringent measures of purification were carried out by the Health Officer.

Diarrhœa was prevalent during the month of July in the 19th Regiment and detachment of the 11th, and the Medical Officer in charge states many cases that were treated would have no doubt been allied to cholera, unless remedies had been given at once; for this purpose remedies were kept and the lines visited several times during the 24 hours by the Hospital Assistant and myself.

Small-pox showed itself in the 19th Regiment in the month of January, and continued till August, during which time twenty-five cases occurred: four proved fatal—all children. In the month of May, three cases occurred in the 21st Regiment; two recruits recovered, one child died: all these cases were treated in the smallpox hospital in the Esplanade pendalls.

Scurvy.—In the 21st Regiment, sixteen cases have been treated in the hospital as scurvy, besides several as scorbutic rheumatism; and there has been a strong taint of the disease throughout the regiment, both among the men and in the families. In the 19th Regiment, scurvy has been more or less prevalent throughout the year, and increased greatly during November and December. The whole regiment was inspected, and 57 were found tainted, but sufficiently well to do their duty; these were ordered up to hospital daily for medicine; thirty-two were admitted into hospital—here with care and better diet they were soon cured. The Medical Officer states, “I attribute the prevalence of scurvy in the regiment in a great measure to the impure state of the atmosphere surrounding the lines, and to the half-cured fish and indifferent food purchased by the men.” The same remark will apply equally to the men of the 21st Regiment.

Vaccination has been regularly carried on during the year, both primary among the children, and re-vaccination among the adults.

Primarily vaccinated 168, successful 124, unsuccessful 44.

Re-vaccinated 397, successful 150, unsuccessful 247.

The only new building in the lines has been a blacksmith's shop in those of the 21st, and no change has been made in the drainage. At the end of December 1871, in consequence of the filthy stench experienced in the lines of the 19th Regiment N. I., from the close vicinity of the public latrines and other nuisances, the regiment was moved into tents, near the Esplanade pendalls, where they remained until 11th March 1872. During this time the huts and lines were thoroughly cleaned. Nothing can be added to the statement made in the Sanitary report for 1871 and previous years, as to the unfitness of these lines for the occupation of troops.

The house drainage of the lines of the 21st Regiment has been under review during the year. In September, Surgeon Seward sent in a very long and elaborate report, and in November, a committee composed of the Commandants of the 21st and 19th Regiments, the Deputy Inspector General, Indian Medical Department, the Executive Engineer, Presidency, and the Medical Officer of the 21st Regiment, sat and reported on the subject. It is undoubtedly very defective and likely to increase in some degree the unhealthiness of the lines.

The lines of the detachment of the 11th Regiment were found so unhealthy from their very damp condition, and the close proximity of the latrines and sweepers' lines, that it was deemed necessary to remove the men to the Esplanade pendalls in July, where they have remained ever since.

The water-supply is good, that for drinking being from the Vehar lake, that for washing is obtained from wells in the lines of both regiments.

The principal diseases have been fever, chiefly ague, rheumatism, diarrhœa, dysentery, and scurvy.

It is not easy to trace with certainty any causes of local malaria, as regards the lines of the 21st Regiment, unless it be from the beforementioned house drainage. Situated as they are on deep sandy soil, surface water never lies stagnant for any time, but rapidly filters away to a depth of 10 or 12 feet, where no doubt a large quantity is always stored up during the rainy season. There is, however, no evidence that in the dry weather it is again drawn to the surface by capillary action, in such a manner as to lead to malarious exhalations; but there is one local influence constantly at work, which must act prejudicially on the health of those exposed to it. I allude to the offensive stench given off from the sewage carried by the Sonapoor drain. This was so forcibly noticed by Surgeon-Major Gilbert in his report for 1871, that I should have simply mentioned it as a probable cause of ill-health to the neighbourhood, but unfortunately his anticipations, that the nuisance would be abated by action taken under Government Resolutions of July 6th and December 11th, 1871, have not been realised, and it has continued in an aggravated form during the year under review. It has formed the subject of frequent reports from the Esplanade Board of Health; and at the end of November it became for some days so intolerable that the Brigadier-General Commanding the District appointed a special medical committee to enquire into and report on the subject. There seems to be no hope of its being remedied as long as the Sonapoor drain empties its sewage into the comparatively still waters of Back Bay.

The subsoil of the lines of the 19th Regiment is not of the same sandy porous quality as that of the 21st Regiment, and surface water is much more likely to stand and become stagnant, and a source of malaria; but this would be, but a small factor in producing disease, as compared with the many other nuisances surrounding them, which have been so well described by Surgeon-Major Gilbert in his report of 1871, that I can add nothing to the picture which he has drawn, but simply endorse all that he has said as to their absolute unfitness.

No alteration has been made in the hospital of H. M.'s 19th Regiment. In that of the 21st Regiment, the separate ward mentioned in the last report has been constructed, and a bathroom formed by enclosing a portion of the north verandah, and a covered way from the hospital to the latrines are being erected, and will be completed in a few days.

I have taken the strength and averages for 1871 from the Sanitary report for that year; but I have reason to suppose that their correctness is invalidated by the fact of a detachment of 200 men of the 2nd Regiment N. I., who were only in Bombay until 20th January, being taken into the average strength in their full number, whereas they being here only till relieved by the detachment of the 11th Regiment only, the one detachment should have been taken into the strength which was really as follows:—19th Regiment 646, 21st Regiment 575, 11th Regiment, 177, total 1,398; and the percentages will then appear as follows:—Treated to strength 106·9. Deaths to strength 0·71. Death to admissions 0·68, and thus the comparative health of the troops in 1872 will not appear so unfavourable as represented in paragraph 1.

TABLE showing Strength, Treated, Deaths, Average Daily Sick of the Native Troops in Garrison in Bombay, during 1870, 1871, 1872.

Years.		H. M.'s 19th Regiment N. I.				H. M.'s 21st Regiment N. I.				Detachment 11th Regiment N. I.			
		Treated.	Died.	Treated to Strength.	Deaths to Strength.	Treated.	Died.	Treated to Strength.	Deaths to Strength.	Treated.	Died.	Treated to Strength.	Deaths to Strength.
1870	Strength ...	...	...	...	...	...	...	633	...	...	...	...	...
	Daily Average	...	...	...	...	...	...	15	...	...	...	...	...
	Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...
	Other diseases	...	...	...	...	408	5	64·4	0·8	...	...	...	...
1871	Strength ...	...	...	646	...	...	...	575	...	...	...	177	...
	Daily Average	...	...	28·6	...	...	...	20	...	...	...	3	...
	Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...
	Other diseases	...	873	1	135·1	0·15	465	8	80·8	1·4	103	1	58·2	0·56
1872	Strength ...	...	...	630	...	...	...	563	...	...	...	158	...
	Daily Average	...	...	20·6	...	...	...	19	...	...	...	5·9	...
	Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...
	Other diseases	...	702	6	111·4	1·0	502	3	89·1	0·53	143	1	90·5	0·63

RIGHT WING H. M.'s 15TH REGIMENT NATIVE INFANTRY.

TANNA.—In Medical Charge of Surgeon H. ATKINS; Strength 295.

The Right Wing of the 15th Regiment N. I., arrived here from Mehidpore on the 10th January 1872, after 19 days' march.

The strength is 295 sepoy and 2 European officers. During the month of August the wing was increased by 60 men, (on account of the number of sepoy on the sick list suffering from dengue,) who left again on the 29th November.

The following table shows the average yearly strengths of fighting men in the wing:—

Average yearly Strength of Fighting Men.	1871.	1872.
	248	295
Remained in hospital last return	18	14
Admitted in hospital during the year	345	646
Discharged from hospital during the year	335	645
Died in hospital during the year	2	1
Transferred from the regiment ... ..	.....	.....
Invalided from the regiment	6	7
Remaining in hospital this day	14	13
Recruit joined during the past year ... ..	.....	.....
Average daily sick during the past year	7·7	14·7
Proceeded on sick leave from the regiment ... ..	.....	3·
Proportion of sick to strength	146·3	223·72
Proportion of deaths to strength	0·8	0·3
Proportion of deaths to treated	0·5	0·1

The table below shows the admissions and deaths from miasmatic diseases—

	Admitted.		Died.		Annual Ratio per 1,000 to Strength.			
					Admitted.		Died.	
	1871.	1872.	1871.	1872.	1871.	1872.	1871.	1872.
Eruptive Fever ... ..	...	1	...	...	...	3·38	...	...
Dengue ... ..	...	200	...	...	...	677·96	...	...
Paroxysmal	228	317	...	...	911·35	1074·57	...	...
Dysentery and Diarrhœa	8	51	...	...	32·25	172·88	...	...
Sorethroat.....	...	1	...	...	...	3·38	...	...
Ophthalmia	13	1	...	...	52·41	3·38	...	...
Rheumatism... ..	10	9	...	...	40·32	30·50	...	...

The chief admissions during the year were from ague, dengue, dysentery and diarrhœa.

The admissions this year from intermittent fever amounted to 317.

The following table shows the proportion per *mille* of the admissions from ague in each month :—

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Admissions	196·39	111·52	64·93	78·06	58·82	51·47	36·63	87·08	44·91	101·40	137·93	113·07
Deaths... ..	...	...	...	...	...	...	...	...	...	...	...	...

There have been no deaths. The fever was of the ordinary type. It was most frequent in the months of January, October, November, and December, and least in May, June, and July. I have no alterations to make in my remarks on its treatment from what I wrote last year. I still continue to use alum as an emetic with every success.

As regards the causes of local malaria, I have but little to state. It appears to me to act with the greatest intensity on the human system, in those situations which are low and moist during the rains, and which when the surface begins to dry up undergo decomposition. Such is the case in the Tanna districts. Local malaria gradually increases in October when the rains begin to lessen, and arrives at its greatest intensity in November, after which the soil begins to dry up, and it gradually decreases in February and March, by which time the soil has dried up. As for the reason of its being so rife during these months, I consider it sufficiently accounted for by the fact that Tanna is surrounded on all sides, except on the east and south by rice-fields; and it is a well-known fact to the natives that as the rice-fields dry up, ague will abound. As regards the “modus operandi” very little is known. Most probably it enters the system by the patient’s breathing an atmosphere saturated, more or less, with the poison (that is, supposing it is a gaseous substance). It does not seem to be introduced by drinking water, as I have known persons who drink carefully filtered water, yet suffer from it very severely. However the latest theory is, that it is caused by the inhalation of cryptogamic spores floating in the atmosphere: this is a very plausible one if it could be brought to the “experimentum cruces”, but like many others of a similar nature it will most probably pass into oblivion after a few years.

The more important question to be considered is, are there any means of prevention by sanitary measures, &c. I am of opinion that it is impossible to expect for some time to come that the natives will ever understand the value of preventive medicine; and, until they can understand its uses, they will never cordially accept the sanitary suggestions made for their benefit. Take the sepoy for example: he closes every nook and corner that will allow a breath of fresh air to enter, and would never be so happy as when he has his hut surrounded with plantain trees, which are watered probably from the water thrown down inside his hut when bathing.

Dengue.—200 admissions. This epidemic commenced on the 6th August and ceased on the 17th September, and although 200 were the number that came into hospital, yet, I have reason to believe that almost every man, woman, and child suffered from it more or less. There were no deaths. At first I was inclined to attribute the symptoms to malarious fever, as I had never seen the disease before. It rapidly appeared in the wing, so that the weekly admissions from it became as high as 66, and at the end of August the number amounted to 172, after which it began to lessen, and it ceased entirely on the 17th September 1872. It was characterised by a sudden paroxysm of high fever, so sudden that some of the patients complained of it in the middle of the night, after going to rest quite well. They awoke with high fever, violent pains of the limbs, and cramping pains of the muscles of the extremities. The temperature rose as high as 104 and 105; the head and body were generally of a burning heat, and racked with pain, especially in the back, hips, ankles, fingers, and toes, and were generally stiff and slightly swollen.

The conjunctivæ were injected in some cases, tongue coated with a thick fur, the pulse rose as high as 110 and 130, and very full, with slight irritability of stomach in two cases; respiration hurried somewhat. These were the symptoms the first day. On the 2nd day, the pulse became slower, and the headache and temperature lessened. On the 3rd day less so; and, generally, after 70 or 80 hours the temperature became normal, though the pulse was somewhat quicker than natural, the pains of the limbs remained troublesome for 8 or 10 days.

Eruption.—Sometimes the surface of the body was covered with red blotches simulating scarlet fever. It was present on all the Europeans that suffered, and only twice observed in the natives. It lasted for 24 or 30 hours, and then subsided—there was no desquamation so far as I could observe. There were 10 relapses. After being free from fever for a day or two, and sometimes much longer, a relapse frequently set in with a return of the pains of the limbs, especially about the ankle and waist, accompanied with much debility. The skin was of normal temperature.

Complications.—They were all of a mild nature, being accompanied with dysentery and diarrhoea in 8 cases, and by bronchitis in 7 cases; mania 1 case.

Treatment.—I am very sceptical of any benefit being derived by medicine beyond emetics and purgatives to relieve the intestinal canal. Theoretically quinine and aconite would appear to be indicated on account of the high temperature, but I cannot say that I observed any benefit from its administration. To relieve the pains of the limbs, after the temperature had become normal, potass iodidum with colchicum and Dover's powder were given, but it appeared to me that beyond keeping the secretions regular, no benefit was derived from it.

I am unable to trace out its origin and cause, and how it was introduced into the wing; it was said to have been epidemic in Bhewndi for some time previously, but there was no communication that I could hear of between these two towns. It is worthy of remark, how confined it was to the wing, and although the hospital was so close to the police lines, yet there was not a single case among them, and only a very few in the town; and also it appears that there have been no cases amongst the police stationed in the districts, where it is said to have been prevalent.

The lines were inspected immediately on the outbreak being recognised. After consultation and in company with my Commanding Officer, we thought it would be best; 1st, to limit its extension as much as possible by seclusion; 2nd, to eradicate the germs of the disease by antiseptics. As regards the former, there did not appear to be any means of carrying it out with reference to the town, there being no regimental bazar; so that the sepoys had to go into the town to purchase their daily food. At the same time orders were issued by the Commanding Officer to prevent all strangers from coming into the lines, excepting those who were returning from leave from their country; as for the police, there happened to be but little or no communication between them and the wing, as they had not been long enough in the station to form acquaintances amongst them. Lastly, remains the jail. The sentries on the watch fortunately never came in contact with the prisoners. 2ndly, as regards the eradication of the germs of the disease, I recommended lime-washing all the huts (and had all the materials ready for its application) if it could have been accomplished. But it was considered objectionable to make the wing encamp during the rains in tents; besides which the huts are composed of wattle and mud, and the sub-divisions only consist of carwee, with little or no mud, 4½ feet high, so that the lime washing would have been applied to bare sticks. Under these circumstances we considered it would be better to use the free application of Macdougall's powder over all the infected huts after they had been well cleared out.

As the hospital only accommodates 16 sick, and even with the verandah only 12 more, it becomes a matter of difficulty how to accommodate a large number of patients in a sickness like the epidemic in question, during the

rains especially. So as there were no available houses, and tents could not be pitched, the ground being so damp that it would have been prejudicial to the health of the sick, under these circumstances they were accommodated in all the available spaces that could be made use of, and although there was much overcrowding for some time, yet no bad result came from it.

The admissions from rheumatism and syphilis require no remarks.

There have been three admissions from scurvy—these generally come into hospital suffering from other complaints. No cases have proved fatal.

Epilepsy.—One case. He appears to have suffered from “petitmal” sometime without coming into hospital, and just after the invaliding committee had sat, it showed itself in a more decided form. Bromide of potassium was given with the effect of lengthening the intervals between the attacks, but without eradicating the disease; he has since gone to head quarters.

Mania.—He was admitted into hospital with dengue on the 31st August, suffering from the usual symptoms. All fever had ceased on the 2nd; on the 6th the pains were getting less, but he complained of weakness. During that day he became odd in his manner, evidently suffering from delusions, talking to himself—skin moist and bathed with perspiration. On the 7th he was much in the same state, having passed a very restless night. On the 8th, he refused his food, and was with difficulty got to take medicine. On the 9th, he refused all food and medicines, talking incoherently; he continued much in the same state till he was sent to the Lunatic Asylum. He returned on the 28th December still odd in his manner. It appears to me to be very doubtful, if he is fit to be entrusted with the arms usually entrusted to a sepoy.

Pulmonary Diseases. Bronchitis 3; pleurisy 1: total 4—deaths 1.

The cases of bronchitis were of a trivial nature and require no remarks.

The case of pleurisy is interesting: he came into hospital, soon after his arrival in Tanna, with pleurisy, accompanied with no effusion. He was treated with salines, antiphlogistics, leeches, and sank on the 5th day after admission; as his case was forwarded no remarks are needed.

Dysentery 41; diarrhœa 10; colic 2; hæmorrhoids 2: total 55.

Sent on sick certificate 1. No deaths.

The table below shows the proportion of admissions and deaths from dysentery and diarrhœa to strength per *mille* per mensem—

			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Admissions	...	...	11·11	18·58	9·74	11·15	7·35	21·69	54·94	21·02	11·97	5·63	3·44	...
Deaths...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

The admissions this year are 55 in number, in excess of last year by 15; they were most prevalent in June, July and August; there were no deaths. One man, who I was afraid would die, was sent away on sick certificate, and has since recovered.

The remarks that I made last year regarding their diet and treatment apply equally to this year.

Guinea-worm.—Two admissions; both these cases were admitted immediately after they arrived at the station, so that there is every probability that the affection was imported from Mehidpore.

The remainder of the cases present nothing worthy of remark.

Vaccination—Has been regularly carried out during the year.

Three men have been sent away on sick certificate with no deaths.

The diet of the sepoy is subject to many variations according to his circumstances, family concerns, probability of being invalided, or wish to be sent away on sick certificate, so that diet tables become only an approximation to the truth after all.

Diet.

The rainfall this year amounted to 86 inches, 6 cents, which is rather less than the usual quantity. It was peculiar that the rains fell extremely heavy in June and July, in August and September scarcely any, and none in October. During the month of May, and beginning of June, there was a great scarcity of water, so much so that I had to supply the sepoys from some of the Jail garden wells.

HER MAJESTY'S 26TH REGIMENT N.I.

SURAT.—In Medical Charge of Assistant Surgeon McConaghy; Strength 640.

The average strength of the regiment during the past year has been 640.

Number of admissions from all causes...	...	..	1,590
Number remaining on 1st January 1872	...	...	71
Daily average number of sick	...	...	40.6
Percentage treated to strength...	...	...	259.5
Deaths to strength	...	...	1.6
Deaths to treated	...	...	0.6

The regiment marched from Nasirabad in wings, which arrived in Surat, respectively, on the 22nd January, and 11th March.

The general health of the regiment, during the year under review, has been fair, except in the latter part of July and the months of August and September, when both the sepoys and their families suffered much from ague and dengue.

The prevailing diseases during the past year have been ague, dengue-fever, rheumatism, bronchitis, cholera, and bowel-complaints.

Ague.—There were 748 admissions from ague during the year, and though this number is very high, yet it will contrast most favourably with that of the previous year, when the admissions were 1,311.

The type of the fever was generally of a mild nature, and readily amenable to treatment with the exception of that prevailing in August and September, when it was of a more obstinate character, and frequently associated with diarrhoea. In 1871, whilst stationed at Nasirabad, the men suffered so severely from ague, in many cases complicated with splenitis, that up to the present time they have not completely recovered from its debilitating effects. The ordinary treatment by quinine, and liquor arsenicalis was usually pursued with satisfactory results; however, the infusion of chiretta combined with a dilute mineral acid was frequently administered, and in many cases with marked success. In April and May, 13 cases of ague were selected for treatment by the hypodermic injection of quinine. A solution of quinine (quinine gr. iii, dilute sulphuric acid, m. iii, water 3 g.) was most carefully filtered and injected under the skin of arm with the following results:—In four cases, though the fever was rather severe, the injection was most efficacious and completely arrested the disease after a second or third repetition. In four, the injection had a favourable result in stopping the progress of the fever, but as an ecchymosed and swollen patch took place at the seat of each injection, causing more or less annoyance to the patients, the operation on the whole cannot be considered satisfactory in these cases. Two cases were not influenced in the least by its administration in this manner, and were ultimately cured with liquor arsenicalis. In two instances the ecchymosed patches, at site of injection proceeded to sloughing and resulted in the formation of weak, indolent ulcers, each almost as large as a four anna piece; these were very slow in healing, and consequently necessitated the patients remaining in hospital several days after the disappearance of the fever. Both these patients suffered severely from ague, complicated with splenitis during the previous year at Nasirabad. The disease in the remaining case becoming complicated with bronchitis, the injection was discontinued after the second operation. In summing up the result of these cases, it would appear that the hypodermic treatment is most suitable for strong healthy patients who have previously suffered but little from ague, and that on the other hand it is frequently followed by swelling and ecchymosis, in some instances going on to sloughing in those whose constitutions have been sapped by the malarial poison.

Three cases of remittent fever are recorded during the year, two of these died on the line of march.

Dengue.—This disease was present in the city, and surrounding villages upwards of a month before it attacked the camp, and as it is generally believed to be infectious, its late appearance may in a great measure be attributed to the precautions taken to prevent, either the sepoys or their families coming in contact with it. The first case in the lines occurred on the 16th May, and from this date until the beginning of October it was present in an epidemic form. This disease attained its maximum in August, when thirty-six patients were admitted.

During the outbreak there were 345 admissions, giving an average number of six days under treatment; beside these a few suffered from mild attacks, and consequently did not present themselves at hospital. As a rule the disease exhausted itself in the first attack, however, it will be seen from an analysis of the total admissions, that a second attack occasionally happened, but that a third or fourth was of rare occurrence. Of the 345 admissions, 274 men were admitted once, 32 twice, 1 three times, 1 four times; making a total of 345.

The leading characteristic symptoms of this disease are, severe fever usually preceded by lassitude and headache, and followed by pain and stiffness of the joints, especially those of the knee, shoulder, and fingers; the fever is, in most instances, attended with foul dirty tongue, bitter taste in mouth, and almost complete aversion to food; constipation, nausea, and vomiting are occasionally present in some instances—the latter symptom is very distressing.

This disease differs in some particulars in the European and native communities.

1st.—As a rule the fever shows a tendency to recur after an interval of a day or two in Europeans; in natives it generally exhausts itself in the first attack.

2nd.—The rash is usually present in European cases; the exception among natives.

3rd.—The joints in Europeans are invariably swollen and enlarged; in natives they are usually of the normal size, but equally painful in both cases.

4th.—Swelling and painful sensations in the glands of the sub-maxillary and parotid regions are more common among Europeans than natives.

The patients were generally treated during the first stage of the disease with aperients, diaphoretics, and quinine, with satisfactory results, and when the fever began to subside, with infusion of chiretta combined with dilute sulphuric acid; and, as it assumed a more chronic form, the pain and stiffness of the joints seemed to be most relieved by the treatment usually pursued in chronic rheumatism.

This disease told severely on the general health of the men, as they had not sufficiently recovered from the debilitating effects of ague which had been so prevalent during the previous year, and who were, therefore, unable to resist its influence.

The disease as a rule is not fatal, however, five deaths occurred among the families, viz., two women and three children.

Contusions furnished 71 admissions, they were usually of a trivial nature, and chiefly shoe-bites. Sixty-nine were admitted with chronic rheumatism; the cases were generally old sepoys, a number of whom have been invalided. One fatal case occurred from this disease, complicated with scurvy; the patient was aged about 47 years, and had suffered frequently from ague in Nasirabad, from the effects of which he never completely recovered.

Diarrhoea gave 50 admissions, and boils forty-four; they were all of an ordinary nature, and require no particular remarks. Thirty-six cases of dysentery were admitted; some of these were of a severe type—one proved fatal. Twenty-five cases of conjunctivitis were treated; they were all of a mild character, and yielded readily to treatment. Twenty-seven cases of bronchitis and two of pneumonia, were admitted during the year. One death occurred from pneumonia.

Cholera.—In the latter part of July, cholera made its appearance in the city, but the camp remained undisturbed by it to the night of the 9th August, when a sepoy was suddenly attacked in the lines, and died on the following morning. From this until the end of the month, ten other cases occurred, and these together with two in September, gave a total of 13. One of these cases was a European who recovered, four were sepoys, two of whom died; seven occurred amongst the families, of these three were fatal; the remaining case was a follower who recovered. Tents for the reception of cholera cases were pitched about $\frac{3}{4}$ of a mile from camp, on the most suitable place procurable; but, owing to the extreme flatness of the surrounding country and the heavy falls of rain in the latter part of August and beginning of September, the patients and those attending on them, were put to great inconvenience on account of the dampness of the ground, both in and around the tents.

On two or three occasions this ground, even in the tents, was completely covered with rain-water to the depth of some five or six inches; and when it is taken into consideration that this is some days in drying up, owing to the retentive nature of the soil and want of sufficient fall for the water to escape, it cannot be disputed, but that this must exert a most injurious effect on those located on it: consequently, I would beg to recommend that either a temporary or permanent building with raised foundation be erected for the accommodation of persons suffering from infectious diseases, whom it might be thought advisable to segregate. Directly this disease was reported in the city, the strictest measures were adopted to prevent its appearance in camp, and on the occurrence of the first and subsequent cases, they were immediately removed from the lines, and treated in tents set apart for their reception. All houses in which cases occurred were carefully disinfected with carbolic acid and MacDougall's powder, and lime-washed.

One case was treated during the collapse with hydrate of chloral in 15 grs. doses, every 2nd hour with satisfactory results. The treatment generally pursued in cholera was adopted in the others. Thirteen cases of guineaworm were admitted during the year; these were chiefly recruits, who had joined from Koncan and Deccan.

The remaining diseases were generally of an ordinary nature, and require no special remarks.

There were ten (10) deaths among those under treatment during the year; three of these occurred on the march from Nasirabad. Two deaths resulted from ague, one on the line of march, and the other about two months after arrival in Surat; both these cases suffered severely from ague in Nasirabad. Two cases of remittent fever proved fatal on the march. Two deaths occurred from cholera. The causes of the remaining four deaths were, respectively, dysentery, phthisis, pneumonia, and chronic rheumatism with complicated scurvy. One sepoy of the regiment died in Bombay, he had been invalided for chronic bronchitis and general debility.

The lines and subsidiary buildings are in good condition, and the huts generally afford sufficient accommodation for the inmates, however, the ventilation is slightly defective. Each sepoy's hut is 15 feet 3 inches high, 10 long, and 9 broad, exclusive of the verandah. The general sanitary condition of the lines and regimental latrines is good. The maidan on the southern and eastern sides of the lines is full of holes—some of considerable size—and during the monsoon decaying vegetable and other organic substances are deposited in them, and, as these slowly decompose and evaporate, they must tend in a measure to increase all diseases of a malarious nature.

The regimental hospital is well situated and in good repair, and affords ample accommodation for thirty-five or thirty-six patients. The out-buildings are also in good condition. The latrine is in a good sanitary state. A separate latrine for female patients is much required.

The rainfall during the past year has been about 35 inches; this is considerably in excess of the average rainfall for the past few years.

No case of small-pox has occurred in the regiment during the year.

Vaccination has been regularly and carefully carried on in the regiment.

Water is obtained from wells in camp in sufficient quantity, but of an inferior quality and brackish; however, good water is obtained at some distance outside camp.

DETACHMENT H. M.'s 21ST REGIMENT N.I.

BASSADORE, PERSIAN GULF.—In Medical Charge of Sub-Assistant Surgeon Hakeem;
Strength 11.

During the year 1872, there came under treatment 117 cases, of these 114 were fresh admissions, and 3 remained from the year previous to 1872. Of these 114, 56 cases were of ague, 3 remittent fever, 4 chronic rheumatism, 14 scurvy, 1 beriberi, 6 bronchitis, 1 dysentery, 2 diarrhoea, 2 sub-acute hepatitis, 1 catarrh urethral, 2 debility, and the rest were cases of other diseases of less importance.

It will be seen that remittent fevers have been the most prevalent affections, forming nearly one-half of the admissions. These cases were of a very asthenic nature, and required stimulants, during the cold and sweating stages, for fear of a fatal collapse.

The fevers were principally of a quotidian type; a few cases had two paroxysms during the 24 hours, thus constituting the double quotidian of some writers. These fevers prevailed most in April, May, June, November and December, 35 cases being admitted in these months, the other 21 being treated in the remaining seven months. Quinine and stimulants were the sole remedies employed.

Of the three cases of remittent fever, one was sent down on sick certificate to Bombay, one died as has been already reported per my letter No. 69 of 19th August 1872, the immediate cause of his death being thrombosis of the heart; notes on the case have already been forwarded with the above letter. It will be seen that scurvy has furnished comparatively speaking a large number of admissions, they form nearly $\frac{1}{3}$ of the total admissions.

The cases of bronchitis have been generally speaking of a mild nature with the exception of one, which was very difficult of cure, the patient having become greatly debilitated. He had previously suffered from broncho pneumonia, and had a very narrow escape from death. As the patient made no improvement, and latterly began to suffer from irregular attacks of fever, he was sent down to Bombay for a change of air.

The cases of hepatitis, dysentery, and diarrhoea, &c., require no particular remarks as they were mild, and yielded rapidly to the usual treatment in such cases. The case of catarrh urethral is remarkable and rare, it was of about 8 years' standing, yielded rapidly to the treatment adopted: the notes on the case have been appended for perusal.

A topography of the station itself has been forwarded with my report for the year 1871.

On the present occasion a few remarks on its vicinity may not be uninteresting to make. As has been already stated in my previous reports, Bassadore station forms the north-western extremity of the long island of Kishin, being in latitude 26° , $39'$, $10''$ north, and longitude 55° , $22'$ east.

With regard to the flora and fauna of the island of Kishin, there is very little to be said. The ranges of hills and mountains which traverse its central part like its backbone, are comparatively speaking barren. The most common trees are those of dates, low-stunted babools (accacias), kaboors (a large leguminous tree), zyzyphus (some of these have very soft double stones in their fruits, and are commonly known as seedless "kinors"). A tamarix, tamarind trees and cordia latifolia, a few scattered banyan trees (one of which is about $1\frac{1}{2}$ miles from Bassadore, and is very old and wide-spreading, and throwing off aerial roots which, reaching the ground, are turned into independent trees), mangrove trees in an extensive swamp, which lies between the island and the Persian mainland. The blossom of these trees and the babools are sources of honey which the bees collect: the dry wood is used for fuel. Among the shrubs calatropis gigantea (madar or kharg) and deheers, a small bushy shrub with thorns and red berries, which are sweet and edible, form the most common and wide spread. In some places the natives possess fig-trees, vines, pomegranate trees, and cotton shrubs. The only wild animals of prey are jackals and foxes; the only game being the deer and hare. Camels and donkeys are the sole beasts of burden, and are also used for riding purposes.

Among the edible birds are pigeons, doves, rock partridges (grey), wild ducks; among sea birds, the flamingoes, curlews, cranes, and other waterfowls; there are serpents too, and a few cases of snake-bites came under my treatment, but none of them proved fatal. It appears that snakes are not very poisonous here.

A few passing remarks on the mineral springs and salt mines, &c., on the island of Kishin and its neighbourhood, I now purpose to make.

There is a small village, called Salakh, inhabited by a few fishermen, about 24 miles in a south-eastern direction from Bassadore, and located close to the sea-shore. At the foot of the chain of hills close to this village, there is a spring of water of a saltish taste, lukewarm, and holds a sort of rock-oil of a reddish colour, having a strong odour resembling that of naphtha. It is skimmed from the surface of the water by the natives. It is highly combustible, burning brightly and yielding a thick smoke. The villagers use this oil locally in rheumatic complaints, and often burn it in place of oil for light. There are other springs of water close to a village called Cashoo, about 12 miles from Bassadore; the water is clear, and holds alumina and some of its compounds with sulphur. But the most important springs are the salt springs and their mines. The small salt caves are about 15 miles from Bassadore, and in the neighbourhood of a small village called Cownee. They are situated close to the sea-shore, and in the interior of a high range of red sand-stone rocks. There is a narrow and low passage leading into the interior of these grottoes; through this passage there is a beautifully clear stream of brine, flowing out into a large and expansive shallow excavation in the ground, where, as the water evaporates, the salt is deposited in large and beautiful crystals, and the whole surface presents a snow-white dazzling appearance; in fact, this spot may be called a salt pan on a gigantic scale.

The caves are entered by the aforesaid narrow passage, the visitors being obliged to go almost on knees and elbows through the salt stream, for about 12 yards with lighted candles to find the passage into these caves. The passage then enlarges into the caves. By candle light the caves present a most beautiful appearance of a dazzling whiteness. The whole cave is covered with stalactites and stalagmites, and in some cases bands of varying thickness, consisting of the purest salt, are observed to extend between the roof and the floor of the caves. Sometimes these stalagmites, increasing in size by the gradual trickling of briny water from the roof, dip into the stream running on the floor, and again spread out into leaf-like expansions, under the surface of the water. The salt is of the finest quality, and is quite free from all impurities.

The large salt caves or mines are situated about 3 miles distant from these, and in the same group of rocks. These are situated in the interior of rocks, which are arranged in an amphitheatre-like manner, the centre of the latter is entered by an open, but long and narrow, winding, path. The salt here is of less pure quality, and is dug out of the sides and base of hills by the men employed for the purpose. Large heaps of granular salt are made at the base of these

rocks, and the salt is removed on camels' backs to the sea-shore for being shipped. The working of these rocks has formed large and extensive caves going in various directions into the interior of the rocks; these are of various depths, and are situated at various heights in the sides of the rocks. The working of these caves is hazardous and full of danger; sometimes the roof or the sides of these caves fall in, burying alive the labourers. In some parts of these rocks, there are mines which yield very transparent pieces of rock-salt. Large quantities of salt are carried by country boats to Muscat and other ports.

There are some sulphurous springs right opposite to the Bassadore station, but situated on the Persian Coast; there being a channel of sea-water about 7 miles in width between it and Bassadore. The spring itself is situated very far into the interior of the chain of rocks, but the stream of the water flows through a deep and narrow, winding ravine, formed no doubt by a gigantic splitting of the rocks in ages gone by, until it emerges on the sea-shore where it loses itself into the sea. The water is charged with common salt (which may be seen deposited along the sides of the stream), and sulphuretted hydrogen gas, and holds a little free sulphur.

On the Persian Coast about 30 miles from Bassadore in a north-eastern direction, there is a place called Khamir. In the rocks in its neighbourhood there are sulphur mines. Sulphur is thus extracted from its ore. The ore of sulphur which principally consists of clay (white), and sulphur is dug out of the rocks. The ore is then heaped over shallow excavations made for the purpose in the neighbourhood of the mines, the heaps are then set fire to when the sulphur melts out of its ore and collects in the hollows, where it subsequently solidifies, and is then removed in large pieces. The workers of these mines lose nearly $\frac{1}{2}$ of the sulphur in their attempts to melt out the sulphur, by thus setting fire to the ore in open air. Not far from these mines, there are some hot sulphurous springs of water. They are highly charged with sulphuretted hydrogen gas, so that the gas is smelt distinctly at the distance of a mile from these springs, the water also holds a little free sulphur.

There are four or five springs situated close to one another, all of them are hot with the exception of a small one, which is quite cold, though situated close to the others.

These sulphurous and other mineral springs, I have described briefly above, are resorted to by most of the natives of these and distant parts, whenever they have some lingering and troublesome affection, be it phthisis, fever, rheumatism, or syphilis, and some of them attribute wonderful cures to these mineral baths; but how far their statements are to be relied upon is a different question altogether. But the generality of these natives seem to have a great faith in the beneficial effects of these baths.

The most prevailing diseases among the natives of these parts, are malarious fevers, enlarged spleen, phthisis—especially among the people of Abyssinian extraction—various affections of the eye, but principally granular conjunctivitis, trichiasis, distichiasis, ulcers, and opacities of the cornea, pterygium, indolent and scorbutic ulcers, principally on the lower extremities, piles, and carious teeth. The originating cause of most of the above affections may be attributed to uncleanly habits and meagre diet, in a word, to a total neglect of the most ordinary and essential rules of sanitation.

The natives have a common idea that sores or inflamed eyes ought not to be touched with water, and I have been often asked by these patients, whether it was injurious to wash a sore, or wash the face because of bad eyes, or not. In my previous report I have shown fully the cause of the prevailing diseases in question.

As regards the general nature of the climate, description of lines, &c., I have already enlarged fully on these points in my report for 1871, and, therefore, I do not deem it necessary to say anything about them here, as the general nature of the climate during the year under report has been almost the same.

DETACHMENT H. M.'S 21ST REGIMENT N. I.

On Board H. M.'s Steamer *Quangtung*.—In Medical Charge of Assistant Apothecary
T. HUNTLEY; Strength 8.

During the past year two detachments of the 21st Regiment M.N.I., have served on board H. M.'s Bombay Marine Steamer *Quangtung*, consisting of a native and seven privates. One detachment being relieved by the other in the month of April.

Nineteen cases have been treated during the year; of these eighteen were fresh admissions, one case remaining from 1871 of the admissions. Dyspepsia furnishes five cases; rheumatism, bronchitis, colic and anæmia two each, all of whom have been discharged to duty; one case of ringworm was admitted in the Persian Gulf. The remaining admissions consist of single

cases of lumbago, ague, asthma, and gonorrhœa, the two former were mild cases, and were returned to duty after treatment. The two latter still remain, both being admitted into hospital in Aden. The case of asthma has supervened in chronic bronchitis.

The general health of the men has been very fair.

H. M.'s Steamer *Quangtung*, B.M., was in the Persian Gulf station during the first four months of the year, and proceeded in May to Aden, and has remained on the Aden station ever since.

H. M.'s 1st C. NATIVE ARTILLERY.

ADEN.—In Medical Charge of Staff Assistant Surgeon H. K. MACLACKLAN; Strength 85.

The company has been generally healthy during the year, but suffered a good deal from dengue during April, May and June. There were no deaths from disease during the year.

The want of all but condensed water, which is rather brackish, induces a scorbutic taint in many of the diseases, but there have been only two admissions for this scurvy. The vegetable supply has been improved since last report.

There was one death from accidental injury. The deceased was attending shot and shell practice with the company, when the quoin of one of the guns, a seven-inch Armstrong—flew back and struck him on the forehead, breaking the frontal bone in many pieces and penetrating to the brain at one spot. There was also a longitudinal fracture of the left parietal bone, and the ethmoid bone at the base of the skull was found on *post mortem* examination to be fractured also. The brain was extensively lacerated, and both that and the membranes were highly inflamed. Patient died after 36 hours with symptoms of compression.

Three men have been invalided during the year; one for chronic bronchitis, one for chronic rheumatism, and one for general debility. No men have been sent for change of air.

H. M.'s 5TH REGIMENT N.L.I.

ADEN.—In Medical Charge of Assistant Surgeon J. T. WELSH; Strength 592

The regiment was stationed at Aden, giving a detachment of 50 men to Perim, until the 24th December, when the head-quarters embarked for Vengurla *en route* to Belgaum.

Aden, one of the most southerly points on the Arabian Coast, is situated in latitude 12° 47' north and longitude 45° 10' east. It is a peninsula—volcanic in formation—fifteen miles in circumference, and is of an oval form, five miles in its greater, and three in its lesser diameter. A band of sand, about 1,500 yards in breadth, connects it with the mainland.

The station is divided into three positions—1st, the crater or camp; 2nd, the isthmus; and, 3rd, Steamer Point.

The crater has two entrances, called the main or northern, and the southern passes, and is enclosed by steep irregular rocky hills, except towards the south-east, which is open to Front Bay, where the barracks for European troops are situated. There also one company European artillery is quartered, and within the crater are the lines of the native regiments, sappers and miners, commissariat followers, and also the native town. All the Aden hills are steep towards the crater, and slope towards the sea; the height of the highest, Shum Shum, is about 1,775 feet.

The second position, the isthmus, is also surrounded by hills, except towards the sea, where massive ramparts complete the enclosure. Communication between camp and isthmus is effected by means of a tunnel, and as a hill sub-divides the latter position into two parts, a second smaller tunnel runs between them. In the first and most confined part of the isthmus, the arsenal, houses and lines of the men, and followers of the Ordnance Department, are situated, and in the second are the barracks and lines for two companies of the European, and one company of the native, regiments.

The Steamer Point or third position occupies the south-eastern promontory, about 6 miles distant from camp; it is the most open and consequently by far the most salubrious part of Aden, especially, during the hot season. Here are the residences of most of the civilians, barracks for two companies of the European regiment, one company European artillery, and quarters for the native artillery. The harbour, Back Bay, lies between the northern shore* of the peninsula and the south coast of the continent.

* *Vide* Map of Aden in Medical History for 1870.

Fifteen years ago the population was estimated at 25,000, and it was believed that an increase had taken place since then ; but, according to the census taken on 21st February 1872, the total only amounted to 22,000, and was made up as follows :—

<i>Civil.</i>						Males.	Females.
Hindoo	...	...	...	...	...	662	192
Mussulmans	...	...	...	...	...	9,978	6,531
Christians	...	...	...	...	...	257	96
Buddists	...	...	...	...	...	17	
Jews	...	...	...	...	...	666	769
Parsees	...	...	...	...	...	93	28
<i>Military.</i>							
Europeans	...	...	...	...	...	854	183
Natives	...	...	...	...	...	1,652	744
Total...						14,179	8,543

The streets are regular, of good breadth, and the sanitary condition, so far as can be judged from external appearances, decidedly good. Now almost all the houses, from one to three stories high, are built of stone and kutchu chunam, and have flat roofs. The smaller houses simply consist of a quadrangular enclosure, with apartments round about, and a yard in the centre. I have not seen the interiors of many of the houses ; but, from what I have seen and considering the disposition and habits of the people, they must be as filthy as it is possible for houses to be. The Somali village, midway between camp and Steamer Point, consists to a great extent of reedhuts, and there are also a few houses of this description in the outskirts of the town. The Abyssinian expedition and the opening of the Suez Canal added greatly to the prosperity of Aden, and, consequently, building has made rapid progress. The treasury, jail, court-house, and other public buildings, with the exception of the church, are very poor looking erections, situated in the crater near the town. Recently a bakery on a large scale, to be worked by machinery, has been completed ; but the building has not added to the beauty of the station.

As earth is a thing almost unknown, vegetation is not abundant, but small trees and flowering shrubs are found in many of the villages. Provisions, generally in abundance, are brought from the interior.

Wells are numerous, but the water is brackish, unfit for drinking or cooking purposes and even unfit for the bath. Water, however, of fair quality, but limited quantity, is conveyed by aqueduct from Shaik Othman, and a scheme has recently been proposed by the engineer for bringing in an abundant supply of good water from the interior, a distance of 30 miles, by means of pipes. Condensed water is used by the troops and followers for drinking and cooking purposes—the government condensers are three in number, one at each position.

The rainfall is very limited and uncertain. During the past ten years the amount gauged was as follows :—

	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.
Inches ...	...	4	1	1	2	1	3	7	...	1
Cents ...	71	...	31	41	57	8	17	19	34	26

The large well-known tanks, to the north-west of the town, for the collection of rain-water from the hills, are huge reservoirs of great age. Originally a cleft in the rock and a valley had been utilized in forming the tanks, and, apparently, various engineers have improved, repaired, and added to them. Report says, that a heavy rainfall of two hours' duration is sufficient to fill them to overflowing, as little water is absorbed. On the arrival of the regiment in December 1870, the tanks were full, but have contained little or no water during the past twenty months.

Good thermometrical observations have not been taken for many years. The coldest month of the year was January, the average temperature as ascertained by a common thermometer, being 76° 6' at 6 o'clock A.M., 79° 6' at 2 P.M., and 78° 9' at 4 P.M. The averages at the same hours during the hottest month,

July, were $88^{\circ} 5'$, $94^{\circ} 1'$, and $93^{\circ} 1'$. The lowest temperature recorded was 75° at 6 A.M., on the 1st February, and the highest 105° at 2 o'clock P.M., on the 30th July. The climate of Aden, though considered healthy—tropical diseases being uncommon—is still very enervating. The cold season, October to March, is cool, and to most people decidedly agreeable; but it is not sufficiently bracing to counteract the bad effects of the unbearable moist heat of the hot season, which continues for nearly six months, and is not improved by occasional *shamals* or dust storms. Owing to the moisture of the atmosphere, and the scarcity of water, tatties cannot be brought into use.

The lines are pucca buildings and look well from the outside, but from the want of space are closely built, and the rooms are small. A sepoy is supposed to have a room about $11\frac{1}{2}$ feet in length, $5\frac{1}{2}$ in breadth, and (say) 10 in height. In the lines for single men there are six rows, each consisting of four pendals and two officers' houses. A wall runs down the centre of each pendal, dividing it into two long rooms (each with 11 doors), which the sepoys have sub-divided by means of matting partitions. In the lines for married men there are six pendals, containing altogether 84 rooms, separated by pucca walls. These rooms measure 10 feet in length, 9 in breadth, and about 10 in height; ventilation is aided by means of openings in the roof and walls. Calculating roughly, each individual man, woman, and child, had a cubic space of about 400 feet. The families and followers, however, were in excess of the authorized number. Cooking is carried on in all the quarters at present, but the erection of suitable cookhouses is contemplated. Bathing accommodation is also conspicuous by its absence, the present arrangement being a shallow pit, filled in with stones, either within or just outside the verandah door. At the suggestion of the Deputy Inspector, these pits have been done away with, and surface drains are to be substituted.

The latrines, three in number, two for the men and one for the women, and adjoining each other, are about a hundred yards from the lines, and just off the main road. The accommodation is sufficient. They are cleaned twice a day by the sweepers, the soil being removed in carts at night, and buried in Holkat's Bay. Disinfectants are not allowed, and, as a consequence, the latrines are occasionally offensive, especially during the hot months. Their construction is somewhat faulty, as the water (abution, &c.) accumulates instead of running off into pans.

There are three urinals for men in the vicinity of the lines, but for the women there is no provision of the kind whatever; there should be four for men and one for women. The present urinals are nuisances, as they are old, insufficient, and disinfectants are not allowed.

The hospital and out-buildings are decidedly good, with ample accommodation both for patients and establishment. The situation is also good, but is unfortunately about a mile distant from the lines. The hospital latrine has been kept clean by the monthly expenditure of 40 lbs. of McDougal's powder.

The average strength of the regiment during the year was 642, of which number 466 were stationed at head-quarters, within the crater, 126 at the isthmus position, and 50 at Perim outpost.

The annual returns include the men of the isthmus detachment, as that position is only about a mile distant from camp, and men requiring hospital treatment resort to the head-quarters hospital.

The Perim detachment is in medical charge of an Assistant Apothecary, who sends separate returns direct to the Deputy Inspector-General. The men whose turn it is for this duty, were always inspected with a view to the rejection of all elderly, weak, or scorbutic men, and, generally, they enjoyed better health there than they did at head-quarters. The detachment as a rule was relieved every two months, but on one occasion it was not relieved for upwards of five months, without proving injurious to the health of the men. An allowance of limejuice and sugar is issued to the men; to insure their taking it, they are paraded for the purpose daily. The quality of the limejuice, however, is very inferior, as it is supplied to the commissariat by a contractor, who procures it from Bombay. For a part of the year the limejuice proposed for issue at Perim was inspected and reported upon by a committee; but this was merely done as a matter of form, as on one occasion, when it was rejected, the contractor discovered that he could procure juice of superior quality in the immediate vicinity of the island of Perim, where no committee could be held. After the rejection of two or three supplies, committees on provision for Perim were no longer asked to give an opinion as to the quality of the limejuice. The consumption of limejuice in Aden must be considerable, and I, therefore, suggested that it should be supplied by the Bombay Commissariat Office after it had been pronounced good by the Chemical Analyser to Government.

Caste.		The admissions and deaths according to caste were as follows :—		
Denominations.		Strength.	Admissions.	Deaths.
Christians	{ Europeans	6	5	.....
	{ Natives	4	1	.....
Mussulmans		67	32	.....
Hindoos		507	361	6
Jews		14	5	.....
Total.....		598	404	6

From the following statement showing the number and average length of the service of the native commissioned officers, non-commissioned officers, and privates, on 1st January 1872, it will be seen that there is a large proportion of young sepoys in the regiment. The figures, however, are only approximate, as many of the men enlisted about 1857, must have understated their ages :—

Rank.	Number.	Length of Service.	
		Years.	Days.
Native-Commissioned Officers	13	27	28
Non-Commissioned Officers	74	20	308
Private and Buglers	578	11	260

As anticipated by the late Medical Superintendent, Deputy Inspector-General Turner, in his Annual Report for 1871, the sickness during the past year contrasts very favourably with that of the preceding year, as shown in the following statement, but the improvement is not due to the men being more acclimatized. When the regiment arrived at Aden, the men were decidedly much below par, having been employed on hard labour—building lines at Belgaum—and being in debt were unable to increase their ordinary diet which, though sufficient for the performance of routine duty, was quite inadequate for hard labour. Again, ague and dengue were epidemic during 1871; whereas during the year under review, these diseases only existed to a slight extent, and debt and hard work were almost unknown. Although the actual sickness is not excessive, still the general health of natives of India gradually deteriorates during a residence at Aden.

	1871.	1872.	Increase.	Decrease.
Average strength	628	592	...	36
Admissions to Hospital	822	399	...	423
Discharged from Hospital	794	396	...	398
Died in Hospital... ..	18	6	...	12
Invalided... ..	17	48	31	...
Average daily sick	26·8	21·4	...	5·4
Proceeded on sick leave... ..	1	11	10	...
Treated to strength per cent.	132·4	70·7	...	61·7
Deaths to treated per cent.	2·1	1·4	...	·7
Deaths to strength per cent.	2·8	1·0	...	1·8
Proportion of sick to strength per cent.	4·26	3·61	...	·65

The very great decrease in the number of admissions and the comparatively high average daily number of sick, show that in 1872 the diseases were more chronic in nature. In the following statement, the admissions to hospital during the past two years, are compared according to disease :—

Sickness.

							1871.	1872.	Increase.	Decrease.
<i>General Diseases.</i>										
A.	{	Ague	...	...	...	...	178	52	...	126
		Dengue	...	...	...	...	320	34	...	286
		Other diseases	...	...	...	...	2	16	14	...
B.	{	Rheumatism	...	...	...	...	45	22	...	23
		Syphilis primary	...	...	...	...	2	...	...	2
		” Constitutional	...	...	...	...	17	1	...	16
		Leprosy	...	...	...	...	...	4	4	...
		Scurvy	...	...	...	...	42	66	24	...
		Other diseases	...	...	...	...	...	...	...	...
<i>Local Diseases.</i>										
Nervous system		...	...	...	...	8	5	...	3	
Eye, ear, and nose		...	...	...	...	7	5	...	2	
Circulatory system		...	...	...	...	4	...	...	4	
Absorbent		”	...	...	...	...	...	...	...
Respiratory		”	...	...	...	13	32	19	...	
Digestive		”	...	...	...	54	40	...	14	
Urinary		”	...	...	...	3	...	...	3	
Generative		”	...	...	...	2	8	6	...	
Organs of locomotion		...	...	...	...	2	2	...	...
Cellular tissue		...	...	...	...	5	3	...	2	
Cutaneous system		...	...	...	...	59	24	...	35	
Other conditions, debility		...	...	...	...	34	38	4	...	
<i>Poisons.</i>										
Indian hemp		...	...	...	...	1	...	...	1	
Stings		...	...	...	...	...	4	4	...	
<i>Injuries.</i>										
Burns, contusions, sprain, &c.		...	...	...	...	24	43	19	...	
Total...							822	399	...	...

As might have been expected a great decrease took place in the cases of ague, dengue and rheumatic affections. The absence of a single case of primary syphilis is highly satisfactory; and the almost entire absence of the disease in a constitutional form, is partially accounted for by a few of the chronic cases having been invalided in 1871.

The diseases for which an increase in the number of admissions took place, were febricula, scurvy, common colds, and slight local injuries, such as shoe-bites. The scurvy cases treated during 1872, numbered 76, and, as was the case during the preceding year, many of the attacks were severe and persistent. Cases of debility, to a great extent due to the climate of Aden, were again numerous.

Of the men stationed at head-quarters and at the isthmus, 295 were never admitted to hospital; 218 were admitted once, 59 twice, 17 thrice, and 3 four times—the number of men actually treated in hospital, being 297.

Excluding the time spent by eleven men on sick leave, the number of days lost to the service by illness per head on the average yearly strength was 13 days—scurvy was the cause of the greatest loss—four days per head, or thrice that caused by any other disease; and then followed debility, rheumatism, bronchitis, leprosy, &c., &c.

Eleven men were granted sick leave to India—all suffered from scurvy; and the average period passed in hospital by each was 3 months, the longest 11 months, and the shortest 1 month. Had these cases occurred in India, the men would not have been kept so long in hospital, but at Aden it is different, as

various circumstances, such as distance to be travelled and expense, both to Government and the men, have to be taken into consideration. Certainly, however, to send severe scorbutic cases off at once would be the kindest way to the patients, and, possibly, not the least economical to Government, as the services of the men are lost, whether they go or remain; but when away, there is, of course, a considerable saving in the matter of rations, batta, and hospital extras.

Of the invalids, 48 in number, only two were short service men, one being discharged on the recommendation of a special medical board on account of imbecility, and the other, suffering from permanent debility, was disposed of by the Annual Invaliding Committee; the former had served 8, and the latter 6 years. The following table shows the average age, service, and cause of disability of those who were invalided on pension.

Cause of Disability.	Number.	Average Age.	Average Service.
Age and length of service	14	48½	30
Broken down constitution	12	38	19½
Leprosy	4	35½	16½
Varicose veins	3	35	16
Deformity from injury and disease	3	33	15
Opacity and Cornea	2	39	18
Hernia	2	33	15
Phthisis	1	35	15
Bronchitis and Emphysema	1	34	15
Asthma	1	37	19½
Weak heart-atheroma of arteries	2	38	19
Chronic synovitis of knee	1	36½	17½

A large number of sepoys invalided shortly after becoming entitled to a pension, is accounted for by men of very inferior *physique* having been enlisted about 1857, as previously mentioned, and by the habit of allowing men, more or less incapacitated for active service, to hang on, until they have earned their pension. The present system of granting pension appears to be radically wrong, and leads to a great deal of scheming and occasional malingering.

The causes of death, and the ages and length of service of those who died were as follows:—

Rank.	Cause of Death.	Age.	Service.
Private. ...	Hypertrophy of heart	40 years	22 years
Do. ...	Disease of liver	31 "	13 "
Do. ...	Scurvy and congestion of lungs	32 "	15 "
Do. ...	Hepatitis, scurvy	33 "	14 "
Do. ...	Scurvy	27 "	6 "
Do. ...	Phthisis acute	41 "	22 "
Do. ...	Debility	33 "	15 "
Do. ...	Unknown on leave	33 "	15 "

During 1871, one man was convicted of malingering, but court-martialed and punished; and in 1872 also another man was convicted of the same offence, and sentenced to punishment in jail, followed by discharge from the service.

Feigned disease.

The Government rations as in previous years, viz., for fighting men, dhall 4 ozs., flour 1 lb., ghee 2 ozs., rice 12 ozs., salt ⅔ oz., firewood 3 lbs., kokum ½ oz., currystuff ½ oz., vegetable (pumpkins, raddish, brinjalls, bendees and bagee) 7 ozs., condensed water 2 gals., and sweet well-water 3 gals. That few men added to the above may be taken for granted, and that many of them converted part of their rations. and even their allowed water into capital, is more than probable.

Diet.

Besides the ordinary uniform, the men are provided with loose serge coats, a great improvement on the tunic, and during the hot season, white clothing was worn. The boots, however well looked after, are simply instruments of torture on the march, especially, in the case of men with a scorbutic taint.

Vaccination. The primary vaccination during the year, were 34 in number, being 1 more than the number vaccinated in 1871.

Since the regiment arrived at Aden, 360 sepoy's of all ages taken indiscriminately have been re-vaccinated. The following shows the result of the operation during 1872 :—

Previously protected by	Number.	Result.		
		Successful.	Unsuccessful.	Percentage of success.
Vaccination... ..	74	15	59	20·2
Small-pox	77	16	61	20·7
Inoculation	37	7	30	18·9

In each instance four insertions were made. Of the 15 successful cases previously protected by vaccination, only three had good vesicles, averaging 3 each, and in one, the old marks were indistinct; eight men had middling vesicles, averaging 2½ to each—the old marks in one case also being indistinct; and in the remaining four cases the vesicles, 13 in number, were bad.

Of the 16 successful cases previously protected by small-pox, the vesicles were good in seven instances, middling in six, and bad in the remaining three cases. The old marks were indistinct in three of the cases with good vesicles, in two with middling, and in two of the cases with bad vesicles.

In all the successful cases after inoculations the old marks were distinct, and vesicles on re-vaccination were good in four cases, the number of vesicles being eleven; in two instances the vesicles, 5 in number, were middling, and in the remaining case the vesicles, 2 in number, were bad.

In many of the unsuccessful cases small acuminated papillae and considerable inflammation were observed on the eighth day after the operation.

H. M.'S 2ND COMPANY OF SAPPERS AND MINERS.

In Medical Charge of Assistant Surgeon J. T. WELSH M.D.; Strength 96.

The general health of the men throughout the year has been very good, and contrasts favourably with the preceding nine months of 1871, during which the company was stationed at Aden :—

					1871 9 months.	1872.	Increase.	Decrease.
Average strength of company					97	96	...	1
Admitted into hospital					128	41	...	87
Discharged from hospital					126	41	...	85
Died in hospital					1	...	...	1
Died out of hospital ... ..					...	2	2	...
Invalided... ..					...	1	1	...
Remaining in hospital					1	1	...	...
Average daily sick					3·3	1·4	...	1·9
Proceeded on sick leave... ..					...	1	1	...
Percentage of treated to strength					131·9	43·7	...	88·2
Percentage of deaths to strength					1·03	2·0	1·0	...
Do. do. to treated... ..					0·78	4·7	4·0	...
Do. daily sick to strength					3·4	1·45	1·6	...

The following statement shows the admissions according to disease :—

							1871 9 months.	1872.	Increase.	Decrease.
<i>General Diseases.</i>										
A	{	Ague	...	...	...	...	12	5	...	7
		Dengue	...	...	...	...	70	2	...	68
		Other diseases	...	...	...	...	...	2	2	...
B	{	Rheumatism	...	...	...	...	10	7	...	3
		Syphilis, primary	...	...	...	...	1	...	...	1
		" constitutional	...	...	...	...	...	...	...	...
		Leprosy	...	...	...	...	...	...	...	...
		Scurvy	...	...	...	...	3	7	4	...
		Other diseases	...	...	...	...	...	...	...	...
<i>Local Diseases.</i>										
Nervous system ...							3	...	...	3
Eye, ear, and nose							1	...	...	1
Circulatory system							...	...	...	...
Absorbent system							...	...	...	...
Respiratory system							2	4	2	...
Digestive system...							4	2	...	2
Urinary system ...							...	3	3	...
Generative system							...	...	...	...
Organs of locomotion							...	1	1	...
Cellular Tissue ...							4	1	...	3
Cutaneous system							9	2	...	7
Other conditions—debility							5	2	...	3
Poisons ...							...	...	...	...
Injuries ...							4	3	...	1
Total... ..							128	41	12	99

Neither hospital nor hospital establishment being required the men are treated in the hospital of the native regiment.

The lines of wattle and daub have been repaired, and much improved since last report. The sanitary arrangements are good, with the exception of the bathing places which simply consist of shallow pits, covered with loose stones in or close to the houses. The water percolates into the stony soil. No bad effects have been observed to result from this, but on the suggestion of the Deputy Inspector General of Hospitals, it has been resolved to do away with the pits and substitute surface drains.

One latrine in the immediate vicinity of the lines, serves as latrine and urinal for men, women, and children. It is said to be on the Turkish system, a deep pit for the reception and accumulation of excreta, &c., with a central shaft to carry off the foul air. It is nicely covered, and well built with seats in a circle, separated by partitions. A cart load of dry earth is used about twice a week as a deodorant, and during the past two years the system has answered remarkably well, the latrine invariably being the least obnoxious in Aden.

In addition to the ordinary clothing, all the men are provided with white clothing for use during the hot season.

The duties of the men have been light, as their services have greatly to their regret seldom been required for public works.

The men are supplied with water and rations in the same quantity and of the same quality as the sepoys of the native regiment ; and, so far as I am aware, they have never made any complaint on the subject.

Only two men were brought before medical boards for the purpose of obtaining sick leave ; one suffered from cirrhosis of the liver, and afterwards died at Kirkee, and the other, a case of scurvy, was not allowed to proceed on leave, as the company had in the meantime appeared in orders for transfer to Kirkee.

One man was invalided for inguinal hernia.

Besides the man who died on sick leave one man died suddenly of fatty degeneration of the heart.

Eleven children were vaccinated during the year, and 59 of the men have been re-vaccinated since their arrival at Aden.

H. M.'s ADEN TROOP.

In Medical Charge of Hospital Assistant H. Bhawoo; Strength 89.

The total treated in hospital amounted to 311, shewing an increase of 26 over the preceding year; thus giving the ratio of 347·1 per cent. treated to strength. No death has occurred during the year.

General Diseases.—Under the class A there have been 138 admissions. In this class almost all of the cases admitted were from fever; the number when compared with the previous return gives an increase of 72 in admissions. During the month of January the troop had been out on patrolling duty, and disease was caused by the malarious state of the district, and was treated by diaphoretics, purgatives, anti-periodics, &c.

Under B, including local diseases, 27 cases were admitted: rheumatism 9, syphilis primary 2, secondary 1, scurvy 6, muscular rheumatism 1. Treatment—such as colchicum mixture, liniment fomentation, Dovers powder, iodide of potassium, plumers pills, mercurial fumigation, &c. Scurvy by anti-scorbutics, gargles, and vegetable diet. One granted sick leave.

Diseases of the Nervous System.—Three cases have been admitted from brow ague and were treated by the usual treatment.

Diseases of the Respiratory System.—Three cases have been admitted: 1 from bronchitis, 1 from asthma, and 1 from catarrhus, and were treated by stimulants and expectorants, &c.

Diseases of the Digestive System.—In this class of diseases the admissions were 31: ranula 2, inflammation of the gums 1, dysentery 10, diarrhoea 5, colic 5, constipation 2 from congestion, and splenitis 6, and were treated by the usual treatment. One case from the latter was granted sick leave for change of climate.

Diseases of the Generative System.—Two cases of orchitis were admitted and treated by the application of cold, suspensary bandage, leeches, fomentation, saline medicines, iodine paint, &c.

Diseases of the Cutaneous System.—Thirty cases have been admitted: 1 from psoriasis, 8 from ulcers, 20 from boils, and 1 from whitlow, and almost all were cured by the usual surgical treatment and discharged to duty.

Injuries.—There are two classes of injuries, one general and the other local: 2 were admitted from burns, and under the local 26 cases were admitted, suffering from contusions, &c., on different parts of the body, and were cured by the usual treatment.

Vaccination has been carefully attended to. Every recruit and follower has been examined on joining the troop, and vaccinated in any doubtful case.

During the last year 1 duffedar was invalided for synovitis, and 1 sowar discharged by the Invaliding Committee on account of a chronic dislocation of right shoulder liable to occur on the slightest exertion.

Drinking Water.—Government supplies two sorts of water to the men for their use, one is condensed, and the other from Shaik Othman aqueduct.

The general health of the troop was good, except in the months of January, February, and March, when fever prevailed, caused as mentioned by me under the head of diseases A.

Until the month of October the sanitary arrangements were different, there being no latrines provided for the men, who had to walk about 480 yards to the seashore for the purposes of nature; since October two temporary buildings have been constructed on a favourable site, and are kept clean regularly under the regimental arrangements.

In April last the commandant applied for additional accommodation for the troop, including a hospital and quarters for the 1st and 2nd class servants. Their erection was not sanctioned by the Government on account of no funds being available, but these buildings are much required.

The only available hospital accommodation is the troop storeroom, which has been given up by the commandant as a dispensary and quarter for the medical subordinate in charge, where the sick attend twice daily for treatment or are treated in their huts.

REPORT ON THE PRESIDENCY DIVISION AND ADEN BY T. B. JOHNSTONE, M.D., DEPUTY
INSPECTOR GENERAL OF HOSPITALS.

I.—Presidency.

The native troops employed in the Presidency Circle of Medical Superintendence, during the year 1872 were—

H. M.'s 11th Regiment N. I.,	Detachment.
„ 15th „ „	Wing.
„ 19th „ „	Regiment.
„ 21st „ „	„
„ 26th „ „	„

STAFF AND DETAILS.

During the presence of His Excellency the Viceroy, there were quartered in Bombay the following additional troops:—

Poona Horse from the 5th to 25th November.

Head-Quarters 17th Regiment N. I., Wing 12th November to 20th December.

„ 26th „ „ 12th do. to 25th November.

2. The detachment of the 11th Regiment N. I. was stationed during the greater part of the year in Bombay; it was, moreover, on duty at Poona from the 18th November to the 9th December. The wing of the 15th Regiment N. I. joined the Division, at Tanna, from Mehidpore and Augur, arriving on the 10th January. This wing relieved the wing of the 10th Regiment N. I. The wing of the 15th has been stationed at Tanna till the close of the year. No change occurred in the 19th and 21st Regiments N. I., which were stationed during the year at Bombay. The 26th Regiment N. I., arrived at Surat, by wings from Nasirabad; the first wing joined on the 22nd January, the second on the 11th March; this regiment relieved the 13th Regiment N. I., which marched on Ahmadnagar on the 14th December 1871, and on the 21st January 1872, respectively. The men composing the staff and details are generally passing, on leave, or detachment duty, or are invalids of the season, who assemble annually in Bombay.

3. The 19th Regiment N. I. gave a detachment to Moorria, the residence of the Political Agent attached to the Chief of Jinjeera (Hubsee). This detachment is changed twice yearly. The 21st Regiment or Marine Battalion gave small detachments to the Persian Gulf, Bassadore and Bagdad, and to vessels in the Bombay Marine, viz., “Dalhousie,” “Quangtung,” “Constance,” “Comet,” “Hugh Rose,” and the Turret ships.

4. The following table gives the average strength of fighting men included in the annual returns of the abovementioned corps and details:—

Table I.

11th Regiment N. I.,	Detachment	...	158
15th „	Wing	...	295
19th „	Regiment	...	630
„ „	Detachment	...	16
21st „	Regiment	...	563
21st „	Detachment	...	72
26th „	Regiment	...	640
Staff and Details	...	...	46

Total...2,420

against 2,412 of the preceding year.

5. Of Regimental European officers the strength was as follows:—

Table II.

11th Regiment N. I.,	Detachment	...	1
15th „	Wing	...	2
19th „	Regiment	...	8
21st „	do.	...	7
26th „	Wing	...	7

Total...25

the same number as in the preceding year.

6. There remained on sick reports of all corps, &c., present at the end of the year 1871, 87 cases of disease.

7. The admissions during the year 1872 were 3,753.

8. The deaths amounted to 25 against 26 of the preceding year.

9. One case only appears to have been transferred; and at the close of the year 1872, there remained 75 sick, being 12 less than remained from 1871.

10. The admissions of European officers on the sick list, were 26 against 11 of the year 1871. Fifteen of these admissions occurred in 6 officers; one thrice for chronic rheumatism and diarrhœa, one twice for dyspepsia and chronic liver disease; one twice for ague, simple orchitis, and acute rheumatism, and one twice for ague. Two of these cases were sent on medical certificate to Europe, one for repeated attacks of intermittent fever, and one for chronic liver disease. The first of these was from the 21st Regiment N. I., the second from the detachment 11th Regiment N. I.

11. The total of admissions, 3,753, was made up from the several hospitals as follows:—

Table III.

11th Regiment N. I., Detachment	...	140
15th " Wing	...	646
19th " Regiment	...	667
" " Detachment	...	34
21st " Regiment	...	474
" " Detachment	...	114
" " do.	...	22
" " do.	...	18
" " do.	...	9
26th " Regiment	...	1,590
Staff and Details	...	39
		<hr/> 3,753

12. The proportion of admissions per cent. to strength varies considerably. In the table showing these percentages, the stations were garrisoned, and those from which relieved are shown—

Table IV.

11th Regiment N. I., Detachment	...	88·60	Bombay.
15th " Wing	...	218·98	Tanna, Augur.
19th " Regiment	...	105·87	Bombay.
" " Detachment	...	212·55	Jinjeera, Bombay.
21st " Regiment	...	84	Bombay.
21st " Detachment	...	950	Bassadore, Bombay.
" " do.	...	275	Steamer "Dalhousie," Bombay.
" " do.	...	225·5	" "Quangtung," Bombay.
" " do.	...	90	Bagdad.
26th " Regiment	...	248·43	Surat, Nasirabad.
Staff and Details	...	84·8	Bombay, various stations.

13. The average daily sick, made up from that of each corps, wing or detachment was—

Table V.

11th Regiment N. I., Detachment	...	5·9
15th " Wing	...	14·7
19th " Regiment	...	20·6
" " Detachment	...	1·26 Jinjeera.
21st " Regiment	...	19.
" " Detachment	...	2·41 Bassadore.
" " do.	...	0·14 "Dalhousie."
" " do.	...	0·36 "Quangtung."
" " do.	...	0·37 Bagdad.
26th " Regiment	...	40·6
Staff and Details	...	3

115·76

against 93·99 of the preceding year.

14. The percentage of daily sick to strength was—

Table VI.

11th	Regiment N. I.,	Detachment	...	3·16
15th	"	Wing	...	4·97
19th	"	Regiment	...	3·17
"	"	Detachment	...	6·26 Jinjeera.
21st	"	Regiment	...	3·4
"	"	Detachment	...	16·70 Bassadore.
"	"	do.	...	12·51 "Quangtung."
"	"	do.	...	12·54 "Dalhousie."
"	"	do.	...	12·54 Bagdad.
26th	"	Regiment	...	6·34
Staff and Details		...	...	6·6

15. There were discharged from hospital 3,637 cases to duty, 172 otherwise, 1 transferred, and 25 died in hospital. Of the discharged "otherwise" 82 were granted sick leave, and the following table shows the causes for which sick leave was recommended, the average number of days, and the greatest number of days under treatment, as well as the least number.

[*Table VII.*

TABLE VII.

DISEASES.	SICK LEAVE.						FROM WHAT REGIMENTS.																
	No.	Average duration of Disease in Hospital.	Greatest number of days in Hospital.	Least number of days in Hospital.	Deaths on Sick Leave.	Least amount of Leave granted.	Greatest amount of Leave granted.	11th Regiment N. I.	19th Regiment N. I.	Detachment 19th Regiment N. I., Junjehra.	H. M.'s 21st Regiment N. I.	Detachment 21st Regiment N. I., Abyssinia and Magdala.	Detachment 21st Regiment N. I., "Dallhouse".	Detachment 21st Regiment, "Hugh Rose".	Detachment 21st Regiment, "Constance".	Detachment 21st Regiment, "Quangtung".	Detachment 21st Regiment N. I., Bassadore.	Detachment 21st Regiment, Bagdad.	Staff and Details.	26th Regiment N. I.	Right Wing, 15th Regiment N. I.	TOTAL.	
Small-pox ...	2	0 48	0 54	0 43	...	1 42	7 0	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	16
Ague...	16	1 9	5 0	0 12	1	1 12	7 0	...	1	...	13	...	...	...	...	...	...	...	...	...	...	...	1
Remittent Fever ...	1	0 48	0 48	0 48	...	.....	5 0	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Rheumatism, Acute...	1	3 0	3 0	3 0	...	5 0	5 0	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
" Chronic	7	0 45	3 0	0 19	...	0 15	6 0	...	2	...	4	...	...	...	...	...	...	...	...	...	1	...	7
Syphilis, Primary ...	2	1 7	1 7	1 7	...	3 0	3 0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
" Secondary...	1	1 9	1 9	1 9	...	3 0	3 0	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Leprosy ...	1	0 38	0 38	0 38	...	3 17	3 17	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Scurvy ...	19	1 9	6 12	0 10	...	0 30	6 0	...	11	...	4	...	...	...	...	...	...	...	...	...	2	...	19
Inflammation of the Ear	1	10 0	10 0	10 0	...	2 0	2 0	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Bronchitis ...	7	2 7	5 0	0 8	1	1 0	4 0	...	3	...	3	...	...	...	...	...	...	...	...	...	1	...	7
Pneumonia ...	3	0 12	0 12	0 12	...	2 0	2 0	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	3
Phthisis, Pneumonic	2	0 39	0 51	0 28	1	4 0	6 0	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Hæmoptysis...	1	3 0	3 0	3 0	...	4 0	4 0	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Pyrosis ...	1	0 19	0 19	0 19	...	3 22	3 22	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Dysentery ...	2	1 22	1 26	1 7	...	3 0	4 0	...	1	...	...	...	...	...	...	...	...	...	...	2	...	1	2
Hepatitis ...	2	2 15	4 0	4 0	...	4 0	5 0	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2
Splenitis ...	2	3 12	6 4	0 20	...	10 0	3 10	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Bright's Disease	2	1 18	2 0	1 7	...	3 0	3 0	...	...	...	2	...	...	...	...	...	...	...	...	...	1	...	2
Hæmorrhoids	1	6 29	6 29	6 29	...	3 0	3 0	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Orchitis ...	1	2 0	2 0	2 0	...	5 0	5 0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Bubo ...	2	1 20	0 59	0 42	...	8 0	6 0	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Gangrene of Scrotum	1	2 0	2 0	2 0	...	5 0	5 0	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Boil ...	1	2 15	2 15	2 15	...	7 0	7 0	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Erysipelas phlegmonous	1	2 0	2 0	2 0	...	3 0	3 0	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Sprain ...	1	1 15	1 15	1 15	...	4 0	4 0	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Paraplegia ...	1	0 29	0 29	0 29	...	4 0	4 0	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1

16. During the year under report, scurvy and ague have been the chief diseases for which sick leave has been granted. Diseases of the chest and chronic rheumatism follow. Only three deaths are shown to have occurred amongst those thus sent away. The greatest amount of leave granted has been for 7 months against 12 of the previous year. The greatest duration of disease in hospital, previous to recommending sick leave, was for 10 months in a case of inflammation of the ear—a somewhat lengthened period—

19	cases of scurvy	} were sent on sick certificate.
16	" of ague	...	...
7	" of bronchitis	...	...
3	" of pneumonia	...	...
2	" of phthisis	...	...

17. The total treated in the circle was—

Table VIII.

11th Regiment N. I., Detachment	...	143
15th " Wing	...	660
19th " Regiment	...	702
" " Detachment	...	34 Jinjeera.
21st " Regiment	...	502
" " Detachment	...	117 Bassadore.
" " do.	...	9 Bagdad.
" " do.	...	22 "Dalhousie" Str.
" " do.	...	19 "Quangtung" Str.
" " do.	...	1,661
Staff and Details...	...	41
		3,910

against 2,905 of the preceding year.

The considerable difference thus shown to have taken place in excess of treated, appears to have been derived thus: first—the regiment quartered in Surat in 1871, the 13th Regiment N. I., in fair health, had 891 treated, while in the 26th Regiment, which took its place, there was much sickness, and the number treated was nearly double, 1,661; second—in the wing of the 10th Regiment quartered at Tanna in 1871, there were 409 treated, while in the year 1872 the 15th Regiment N. I., wing, which took its place, had 660. The 21st Regiment in Bombay, the detachment of the 11th Regiment N. I., also in Bombay, the detachment of the 19th Regiment at Jinjeera, those of the 21st Regiment, and the staff and details, all helped to swell the number by increase in treated, the only corps showing a decrease being the 19th Regiment N. I., which had 194 less than in the previous year.

18. The percentage of treated to strength in the charges which have been in Bombay during the preceding two years is as follows:—

Table IX.

	1871.	1872.
11th Regiment N. I., Detachment...	58.19	90.50
19th " Regiment	138.69	111.43
" " Detachment	100.	212.5
21st " Regiment	80.86	89.16
Staff and Details ...	108.33	89.13

19. Intermittent fever was the cause of increase in certain medical charges, and gave admissions into hospital during the year as follows:—

Table X.

	1871.	1872.
11th Regiment N. I., Detachment...	30	55
15th " Wing	233	317
19th " Regiment	251	194
" " Detachment	12	25
21st " Regiment	192	144
" " Detachment	...	56 Bassadore.
" " do.	...	2 "Dalhousie".
" " do.	...	2 "Quangtung".
" " do.	...	1 Bagdad.
26th " Regiment	1,281	748
Staff and Details ...	7	13

This table shows a decrease in the admissions from fever in the 19th, 21st, and 26th Regiments. In the latter regiment to be attributed to change directly, and quiet after the fatigue of a long march.

23. The following table gives a percentage of admissions to strength, and admissions to treated from intermittent fever, contrasted with those of the charges which remained in the division in the preceding year:—

Table XI.

		To Strength. 1871.	To Strength. 1872.	To Treated. 1871.	To Treated. 1872.
11th Regiment N. I., Detachment	...	17	34.81	28.9	38.46
15th	Wing ...	...	107.4	...	48.03
19th	Regiment	38.8	30.7	28	27.63
"	Detachment	70.5	156.25	70.5	73.52 Jinjeera.
21st	Regiment	33.3	25.57	41.2	28.68
"	Detachment	...	466.6	...	47.86 Bassadore.
"	do.	...	25.5	...	22.22 "Dalhousie".
"	do.	...	25	...	9.09 "Quangtung".
"	do.	...	1	...	5.26 Bagdad.
26th	do.	...	116.86	...	45.63
Staff and Details	...	29.1	28.26	26.6	31.70

With the exception of the two detachments Jinjeera and Bassadore, it will be seen from the above table, that the wing of the 15th Regiment N. I., at Tanna, and the 26th Regiment at Surat, suffered most to strength and most to treated.

In the detachment at Jinjeera, strength 16, there were 25 cases of fever, chiefly admitted in the early post monsoon months. In the Bassadore detachment, the strength was 12, and the admissions from fever were 56. These two places are notably malarious.

21. There have been no deaths amongst European officers recorded during the year.

22. The mortality in hospital amongst the native commissioned, non-commissioned officers, and soldiers, amounted to 25, being one less than in the preceding year. The deaths out of hospital are 11 against 29, shown in the last year's returns. Only three of the eleven deaths appear to have occurred in men absent on sick leave.

23. The death rate per cent. to total average treated was 1.03; if to this be added the deaths out of hospital, the rate will be 1.07, in both a decrease on the ratios of the previous year is observed. Deaths resulted from the following diseases:—

Remittent fever	...	7	Bronchitis	...	...	2
Phthisis, <i>Pulmon</i>	...	2	Pneumonia	...	...	1
Pleurisy	...	1	Dysentery	...	...	2
Cholera	...	2	Ague	...	...	4
Tetanus	...	1	Aneurism	...	...	1
Peritonitis	...	1	Chronic rheumatism	...	...	1
						25

These deaths occurred in the various charges as follows:—

Table XII.

		To Strength.	To Treated.
11th Regiment N. I., Detachment	...	1	0.63
15th	Wing ...	1	0.34
19th	Regiment	6	0.96
21st	Do.	3	0.53
"	Detachment	1	0.33
26th	Regiment	10	1.56
Staff and Details	...	3	6.53
			7.30

24. Out of hospital the returns show the following number of deaths, to each corps or detachment:—

Table XIII.

11th Regiment N. I., Detachment...	...	1
19th	"	2
21st	"	7
26th	"	1
		11

24. This contrasts favourably with the out of hospital deaths of the previous year ; the percentage to strength being as follows :—

Table XIV.

		1871.	1872.
11th Regiment N. I. ...	...	2·25	0·63
19th " ...	...	1·23	0·31
21st " ...	...	4·17	1·22
26th " ...	...	not known	0·15

25. The medical history of the detachment of the 11th Regiment N. I., shows that during the year, it was more unhealthy than in the previous one ; and that in the rains of 1872, in the month of July, the huts, in which the men and families resided, had become so utterly unfit to live in, that it was found necessary to remove the men to the pendals, on the Esplanade, where they are still located. This was done on the recommendation of the Medical Officer in charge, Surgeon Seward, M.D., who, in consequence of a case of cholera occurring in a child, visited the lines and reported on them. Subsequent to the removal I visited the lines with Dr. Seward. Deserted—they appeared probably worse than they were really ; but they were in a most undoubtedly insanitary condition, and the removal of the men was a wise and timely precautionary measure.

The municipal arrangements which have been, and are, the subject of annoyance, discomfort, and injury to the health of all within their influence, it appears useless to again enter into a description of. They are denounced by all medical authorities, and will in time, doubtless, be removed ; at present they are *non tangenda* "*non movenda*."

26. The annual report of the Medical Officer in charge of the wing of the 15th Regiment N. I., stationed during the year at Tanna, shows that much sickness prevailed ; 646 cases, out of a strength of 295, being admitted into hospital ; 200 of these cases were from dengue, and 317 from fever, being more from the latter disease than in either of the previous two years, when the wing was quartered at Augur.

The medical histories of the year will doubtless show how curiously and with what eccentricity of movement the disease called dengue originated and travelled ; fixing itself amongst certain sets of people, or at certain places. The wing of the 15th Regiment is a peculiar instance. Dengue appeared in this wing in August, spread rapidly amongst the men and families, and disappeared completely on the 17th September. Its origin in the wing could in no way be accounted for. The disease, a considerable time before, had run through the town of Bhondi, more than 14 miles distant, with a large tidal creek intervening, and it had also formed an unsettled lodgement in Bombay ; it had, however, ceased in both these places, and had not extended beyond them. Though every man was attacked, the disease confined itself to this wing. The prisoners and officials of the jail, of which the native soldiers formed the guard, the police corps, whose lines adjoin those of the wing, the townspeople, with whom communication could not be avoided, all were unaffected and remained so.

The Civil Surgeon and one or two Europeans were the only other sufferers. Surgeon Atkin's remarks on the disease will repay perusal. Table X. will show that in this medical charge improvement has not taken place. I continue to consider the lines as ancillary to the malaria of the place, and to such other causes as tend to render the men susceptible to the reception of disease, *e.g.*, poverty of diet, &c. There are certain recommendations in this annual report which have been frequently made—some of which, I think, should not be passed over—1st, rebuilding pendals for 1st Class Establishment ; 2nd, ditto for 2nd Class Hospital Establishment ; 3rd, re-arrangement of latrines ; 4th, the closing of a stinking cesspool in the lines, upon which subject I addressed the Commanding Officer, without, as far as I am aware, any action being taken.

27. The annual report of the Medical Officer of the 19th Regiment N. I., points out that the health of the regiment has improved during the past year, though signs of scurvy had shown themselves ; indeed, 33 cases had been under treatment, 11 of whom Surgeon Wakefield considered it advisable to send away on sick certificate. The men are periodically inspected. Fever gave less cases by 53, than in the previous year. Small-pox showed itself in the lines, and retained its hold for several months.

The detachment of this regiment generally sustains fever on the termination of the monsoon. At my inspection of the detachment, recently at Moorla, I found that temporary lines had been built for them—the men were enjoying good health. The Hospital Assistant has been at Jinjeera (Moorla), for nearly two years, and has not had fever. At my inspection of the lines of the regiment I found all clean and in excellent order. There is nothing to add to the statements made in my last report. I do not consider that these lines should continue to be occupied longer than can be avoided. They are themselves and their surroundings in every way objectionable ; in housing of native soldiers, they stand on a par with the huts of the wing at Tanna, and the detachment of the regiment in Bombay.

28. The Medical Officer of the 21st Regiment N. I., Surgeon-Major Mills, shows in his report, that the sickness of the regiment was somewhat in excess of the previous year; it is, however, to be noticed that fever cases had decreased. Surgeon-Major Mills has forwarded a table which shows, as regards this regiment, that in 1863 the average daily sick was 14, and in 1872 it was 19. During this period of ten years it had fluctuated, the highest being 37 in 1865. In 1863, there were 6 cases of cholera, in 1864, 20, and in 1865, 13, since which year no case of cholera appears in the returns of the regiment. From the table we must conclude that the health of the regiment, as regards pronounced disease, has improved since 1864, though it is to be noticed, that in 1863, there were fewer treated than in any year since; in this year, however, there were 6 cases of cholera, all of whom died. It is possible that decrease of board of ship service has reduced the amount of disease, and that better water and line sanitation have likewise had a powerful influence. If good and plentiful food and more purity of air could be added, the *physique* of the men would not be, what it is stated to be, below "par." At one period of the year, the hospital accommodation was found to be insufficient; the sick of the detachment of the 11th Regiment N. I., were, therefore, ordered to be treated in the more commodious hospital of the 19th Regiment. A bathroom has been built at each end of the hospital verandah, and a covered way made to the latrine.

The Hut drainage system of these lines, has, in addition to being brought to notice in my last year's report, now engaged the attention of the Brigadier-General, who called on the Medical Officer in charge, then Surgeon Seward, M.D., to report upon it. At my recent annual inspection, two of the tubs or barrels were opened, a portion of the earth taken out, enclosed in closely fitting tin canisters, and forwarded to the Chemical Analyser to Government, whose report has been forwarded to the Brigadier-General with certain suggestions for the early change of the present system; and as an addendum to the report of a mixed committee, which was convened to take the subject into consideration, Mr. Lyon's report was forwarded on the 15th ultimo.

The health of the detachment of the regiment does not call for much remark. The Sub-Assistant Surgeon's account of the island of Kishin, would show it to be an extremely malarious place.

29. The 26th Regiment N. I. is gradually recovering from a long continuance of ill health, which appeared to culminate on its being subjected to dengue, which passed from the city to the camp. The regiment marched into Nasirabad at the end of 1870, having been previously quartered at Baroda. During their stay at Nasirabad, the regiment suffered greatly from fever; in the year 1871, 1,311 cases were admitted, while in 1872, quartered in Surat, where the regiment arrived by wings in January and March, only 748 cases were entered. Cholera appeared in the month of August, having, notwithstanding all precautions, passed from the city: 13 cases occurred, of whom 4 were soldiers, and 2 of whom died. It is very necessary that a shed should be erected for the reception and treatment of contagious and infectious disease, and I have submitted a suggestion to this effect to the Major-General Commanding.

Assistant Surgeon McConaghy, M.D., in medical charge, has sent, with his annual report, one on the dengue as it appeared in this regiment. When I inspected the hospital, lines, &c., the men were, to all appearance, rapidly recovering health and strength.

30. The lines of the Grand Arsenal and Gun Carriage Department have lines in Lower Colaba; these are located unfortunately with regard to sanitary conditions; closed or blocked in on all sides, ventilation is of the most imperfect description; they have, close in front of them one of those municipal features of the city, a large latrine, the stench from which, even to lines, is a source of disquiet and abhorrence. The sweepers' lines, too, are close to them. I found in the lines themselves little to complain of. During the rains, when a few cases of cholera appeared, there was a state of affairs of a very objectionable character reported on by Surgeon Seward. The officers and men with whom I spoke all complained of the place, and begged my intercession for their removal. This will probably form part of a question for native soldiers' accommodation in Bombay. For the present, prevention of overcrowding by family visitors from the districts should be most carefully attended to, as much as the cleanliness of the lines themselves. When I inspected the lines, many children were found unvaccinated; they had recently arrived with other family members from their villages. These people surreptitiously find lodgings in places already all too small, and doubtless, at times, bring with them those diseases it is the endeavour by careful attention to prevent. To this cause was to be attributed the cholera in the rains.

The lines have a considerable strength, averaging during the year 453.

Their average daily sick was	8
Sick to strength	48.3
Death 7 or	1.5 to strength.

31. Deolalee Lock Hospital.

Several alterations have been made from time to time since the conversion of the cholera-shed into the lock hospital; the last and best is that of 1872, the raising of the floor and so preventing its being flooded in the rains. At my inspection I found the building (hut) perfectly clean as well as the outhouses. There were no patients, but 8 or 9 prostitutes were on the register. The hospital requires protection: *vide* accompanying "remarks." It is possible the establishment of this hospital may have the effect of deterring diseased women from frequenting Deolalee. It is, however, remarkable that the registered number should be so far above the greatest number examined, while fines levied under the Act amount to only one rupee. Dr. Semple, in medical charge, considers, and I quite agree with him, that the absence of the police renders the Act "quite inoperative." At the period of my visit there was not a single patient, and the average in hospital was 0·90 composed of two women, whose diseases were connected with venereal.

Dr. Semple throws out a suggestion which, in my opinion, is worthy of the attention of the Inspector General; it is that the lock hospital should be utilized as a dispensary, and thus the employment of a hospital assistant would be more than nominal, and a want supplied. Dr. Semple suggests that, with a room set apart for the reception of venereal disease, the hospital might receive out-patients of whom there would probably be a considerable number. Should the proposal meet with approval further enquiries might be instituted; at present it is simply a suggestion for making some use of a place and a hospital assistant—the one without sick, the other without employment—by doing this it would probably be the means of making the people familiar with the place, and possibly bring prostitutes and others with venereal diseases for treatment. Matters being much as they were in 1871, I have copied this from my last year's report; it contains the suggestion of Staff Surgeon Semple, which another year's experience has not led him to withdraw.

In my annual inspection of Hospitals, Military, in the Presidency Circle, it has afforded me much satisfaction to feel that I can report favourably on the management and general discipline of all.

STATEMENT.

GENERAL RETURN of the Native Troops, showing the amount of Sickness,

TROOPS IN PRESIDENCY DIVISION AND BOMBAY MARINE.				STRENGTH AND DIED TO STRENGTH IN AND OUT OF HOSPITAL AND ON LEAVE.								Average strength.	Average daily sick per cent. to average strength.	Average daily number of sick.	Ratio of deaths to treated	
				Christians.		Hindoos.		Mussul- mans.		Jews.						Total strength on the 31st December 1872.
				Strength.	Deaths per cent.	Strength.	Deaths per cent.	Strength.	Deaths per cent.	Strength.	Deaths per cent.					
Detachment 11th Regiment N. I. ... ..	...	...	...	176	1·14	11	...	...	...	187	158·3	3·16	5·9	0·69
Right Wing 15th Regiment N. I.	9	...	...	254	0·3	26	...	3	...	292	295·	4·98	14·7	0·15
H. M.'s 19th Regiment N. I..	6	16·66	...	560	1·25	85	...	15	...	661	630·	3·27	20·6	0·85		
Detachment 19th Regiment N. I., Junjeera ... ..	...	...	...	13	...	3	...	...	...	16	16·	0·28	1·26	...
H. M.'s 21st Regiment N. I...	1	...	...	441	1·6	124	1·6	5	20·	571	563	3·4	19·	0·59
Detachment 21st Regiment, "Abyssinia" and "Magdala".	...	...	...	...	...	...	...	...	...	16	16	...	...	...
Detachment, Bassadore	...	...	...	9·75	0·1	2	...	...	...	11	12	0·21	2·41	0·85
Do. St. "Constance"	...	...	...	...	...	...	...	...	...	...	8	...	...	...
Do. St. "Dalhousie"	...	...	...	7	...	...	...	1	...	8	8	0·17	0·14	...
Do. Bagdad	...	...	...	...	...	...	...	...	...	10	10	0·37	0·37	...
Do. St. "Hugh Rose"	...	...	...	...	...	...	...	...	...	...	10	...	...	...
Do. St. "Quangtung"	...	...	...	...	...	...	...	...	...	8	8	0·45	0·36	...
H. M.'s 26th Regiment N. I.	...	...	...	554	1·8	65	1·53	...	...	600	640	6·34	40·6	0·60
Staff and Details	1	...	...	121	1·6	8	...	1	100·	132	46	6·5	3·	7·31

Mortality, Discharges by invaliding, &c., in the Aden Presidency Division, during the year 1872.

PROPORTION OF ADMISSION TO STRENGTH PER CENT.			PROPORTION OF DEATHS TO STRENGTH PER CENT.			Invalided. Obtained sick leave.	DISEASES, ADMISSIONS, AND DEATHS.												Average number of consecutive nights in bed.	INCREASE BY			DECREASE BY		
From cholera.	From other causes.		From Cholera.	From other Causes.			General Diseases.			Local Diseases.			Injuries.			Total.				Recruiting.	Boys.	Otherwise.	Deaths.	Invaliding.	Dismissal and Desertion.
							Admission.	Deaths.		Admission.	Deaths.		Admission.	Deaths.		Admission.	Deaths.								
								In.	Out.		In.	Out.		In.	Out.		In.	Out.							
...	88.60	88.60	...	0.63	0.63	4 11	74	...	1	61	1	...	5	...	...	140	1	1	3	...	...	11	2	4	2
...	218.98	218.98	...	0.34	0.34	7 3	534	...	...	98	1	...	14	...	...	646	1	...	4 ³ ₄	...	...	...	1	7	...
...	105.87	105.87	...	0.95	0.95	19 23	335	4	1	257	2	1	75	...	...	667	6	2	4 ¹ ₄	76	4	...	8	17	12
...	212.05	212.05	...	...	...	...	25	...	...	7	...	...	2	...	...	34	...	...	12	...	...	...	...	...	...
...	84.02	84.02	...	0.53	0.53	27 37	224	1	4	206	2	3	44	...	...	474	3	7	3 ¹ ₄	57	2	1	10	27	1
...
...	95.	95.	...	8.33	8.33	3 3	78	1	...	36	...	...	...	...	...	114	1	...	...	...	...	1	3	...	...
...
...	275.	275.	...	..	...	...	14	...	...	7	...	...	1	...	...	22	...	...	...	...	...	...	...	...	...
...	90.	90.	...	...	...	...	4	...	...	5	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...
...
...	225.	225.	...	...	...	...	6	...	...	11	...	...	1	...	...	18	...	...	...	...	...	...	...	...	...
0.62	247.81	248.43	0.31	1.25	1.56	76 6	1197	7	...	311	3	1	82	...	...	1590	10	1	4	57	...	11	76	...	...
...	84.8	84.8	...	6.52	6.52	4 2	21	...	...	17	3	...	1	...	...	39	3	...	...	...	...	3	4	...	...

No. II.—ADEN.

The supervision of the medical arrangements, civil and military, at Aden, was in the month of August 1872 added to the duties of the Deputy Inspector General of Hospitals, Indian Medical Department, Presidency Division, and the appointment of Superintendent, Medical Department, Aden, was then abolished.

The native troops employed at Aden and Perim during the year 1872 were—

Troops.	H. M.'s 2nd Company	Sappers and Miners.
	" 1st "	Native Artillery.
	" Aden Troop	of Horse.
	" 5th Regiment	N.L.I.
	" 5th "	N.L.I. Detachment to Perim.

The 2nd Company Sappers and Miners, Aden Troop and 5th Regiment N. I., were quartered in Aden during the year. The 1st Company Native Artillery arrived at Aden on the 20th February 1872 from Bombay, having relieved the 2nd Company, which returned to India. H. M.'s Regiment N. I. gave off a small detachment to Perim. This was relieved every second month.

The following table gives the average strength of fighting men, included in the annual Average. returns of corps, &c. :—

Table I.

Strength.	2nd Company, Sappers and Miners	...	...	96
	2nd " Native Artillery	...	...	86
	Aden Troop ...	...	...	90
	5th Regiment N.L.I.	...	...	592
	5th " N.L.I. Detachment	...	...	52
				<u>916</u>

against 953 of the preceding year.

Regimental Officers. Of the European regimental officers the strength was as follows :—

Table II.

2nd Company	Sappers and Miners	...	...	...	1
1st "	Native Artillery	...	...	...	1
Aden Troop	...	...	...	...	1
5th Regiment	N. I.	...	...	...	6
5th "	N.L.I. Detachment	...	...	...	1
					<u>10</u>

Remained in 1871. At the end of the year 1871 there were remaining on the sick report of all corps and detachments 32 cases.

Admissions. The admissions during 1872 amounted to 1,005 against 1,412 of the previous year.

The mortality amounted to 8 against 20 of the previous year. One case only appears to have been transferred, though 8 cases were returned from Perim detachment on relief, of the regimental hospital.

Mortality. There were remaining, at the close of the year, 23, being 9 less than were shown at the end of the year 1871.

There were 6 European regimental officers admitted on the sick list; 4 of these admissions were in 2 officers, one twice for ague and dysentery, and one twice for dengue and meloena. One of these cases, the former, was sent on sick certificate for fever contracted while on continuous patrol duty in Arabia.

Sickness in European officers of Native Troops. The total admissions, as above stated, were 1,005, made up from the various charges as follows :—

Table III.

Admissions of each charge.	2nd Company Sappers and Miners	...	...	41
	1st " Native Artillery	...	...	187
	Aden Troop of Horse	...	...	308
	5th Regiment N.L.I.	...	...	399
	5th " N.L.I. Detachment	...	...	70
				<u>1,005</u>

Admissions per cent. to strength. The proportion of admissions per cent. to strength varied considerably: the following table points this out:—

Table IV.

2nd Company Sappers and Miners	...	...	42.30
1st " Native Artillery	...	...	217.44
Aden Troop of Horse	...	...	341.55
H. M.'s 5th Regiment N.L.I.	...	...	67.39
H. M.'s 5th " N.L.I. Detachment	...	...	134.63

The average daily sick from each corps was—

Table V.

Average daily sick of each charge.	2nd Company Sappers and Miners	...	...	1.4
	1st " Native Artillery	...	...	5.38
	Aden Troop of Horse	...	...	7.0
	5th Regiment N.L.I.	...	...	21.4
	5th " N.L.I. Detachment	...	...	1.7
				<hr/> 35.53

against 50.5 of the preceding year.

The percentage of the daily sick to strength of the above corps shows—

Table VI.

Percentage of daily sick to strength.	2nd Company, Sappers and Miners	...	...	1.04
	1st " Native Artillery	...	...	5.72
	Aden Troop of Horse	...	...	7.7
	5th Regiment N.L.I.	...	...	3.61
	5th " N.L.I. Detachment	...	...	3.26

Discharged from hospital. There were discharged from hospital 973 cases to duty, 24 were discharged otherwise (of whom 14 were granted sick leave), 8 died in hospital.

The annexed table shows causes for which sick leave was granted from Aden, the average number of days, and the greatest number of days under treatment, Sick leave to sepoys, &c.:—

Table VII.

[Aden.]

DISEASES,	Sick Leave,							From what Regiment.					TOTAL
	Number.	Average number of days in hospital.	Greatest number of days in hospital.	Least number of days in hospital.	Deaths on sick leave.	Average amount of leave granted.	Greatest amount of leave granted.	1st Company, Native Artillery.	2nd Company, Sappers and Miners.	Aden Troop.	H. M.'s 5th Regiment N. L. I.	Detachment H. M.'s 5th Regiment N. L. I.	
Debility.....	2	1.8	1.11	1.5	1	6	6	...	1	...	1	...	2
Scurvy and rheumatism.....	1	5.23	5.23	5.23	...	12	12	...	...	1	...	...	1
Splenitis and ague	1	1.2	1.2	1.2	...	12	12	...	...	1	...	...	1
Scurvy	9	2.24	9.29	0.29	...	6	6	...	...	...	9	...	9
Scurvy (hepatic diseases) ...	1	11.6	11.6	11.6	...	6	6	...	...	...	1	...	1

From this table it will be seen that scurvy and debility were the main diseases; the greatest amount of sick leave was for twelve months, to Hindoostan—the least six months, to the Koncan.

Total treated made up from each charge. The total treated at Aden and Perim was made up thus—

Table VIII.

2nd Company, Sappers and Miners	...	...	42
1st Do. Native Artillery	...	...	192
Aden Troop	...	...	311
5th Regiment N.L.I.	...	...	419
5th " N.L.I. Detachment	...	...	72
			<hr/> 1,037

Table IX.

		Admissions.	Treated.	Average Strength.
2nd Company Sappers and Miners	...	5	42	96
1st " Native Artillery	...	34	193	86
Aden Troop	...	182	311	90
5th Regiment N.L.I.	...	52	419	592
5th do. N.L.I. Detachment...	...	14	72	52
		287	1,037	916

giving a percentage of admissions—first to treated, and secondly to strength as follows:—

Table X.

	Station.	To Strength.	To Treated.
Camp	2nd Company, Sappers and Miners	11·90	5·20
Steamer Point	1st do. Native Artillery	17·61	39·53
Kora Muxee	Aden Troop	58·52	20·22
Camp	H. M.'s 5th Regiment N.L.I.	12·41	8·74
Perim	Detachment H.M.'s 5th Regiment N.L.I.	19·14	26·92

From the table it will be observed: 1st, that the troops stationed at Camp, Aden, have the fewest admissions, both to strength and treated; 2nd, that the Intermittent Fever. Aden troops had most cases to treated; 3rd, that the Native Artillery and Perim detachment had most admissions to strength. The total admissions from the disease in 1872, were 287 against 344 of the preceding year, and 34 more than in 1870.

There have been no deaths among regimental European officers during the year. The mortality amongst the native commissioned officers, non-commissioned officers, and men amounted to 8, being 12 less than in 1871, and 2 more than in 1870. Out of hospital the deaths are shown to have been 2, against none of the preceding year's return; these occurred in men sent away on sick certificate.

Total rate. The death rate per cent. to total average strength is 0·78; if to this be added the mortality out of hospital the rate per cent. would be 1·08.

Ratio in each charge. In the various charges, the in-hospital mortality and rate per cent. to treated and strength was as follows:—

Table XI.

	Deaths.	To Strength,	To Treated.
2nd Company Sappers and Miners	...	...	...
1st do. Native Artillery	1	1·17	0·52
Aden Troop	...	...	...
5th Regiment N.L.I.	6	1·01	1·54
5th do. N.L.I. Detachment	1	1·92	1·38

The deaths which occurred out of hospital were 2 in the 2nd Company Sappers and Miners, and 2 in the 5th Regiment N.L.I.

Beyond passing remarks I have not observed that any history of the Ordnance and Lascars and department Commissariat Department has been furnished until the present followers. year.

The average strength of these departmental servants is shown to have been 835, with 4 Strength. European commissioned officers, and 27 European warrant and non-commissioned officers,

This charge, which from its number would appear to be important, is under the care of The Medical Charge. the medical officers of the native infantry regiment, and the sick are treated in the Native Military General Hospital.

The admissions were 236, the chief diseases being intermittent fever, dengue in subsi- Admissions. dence, chronic rheumatism, scurvy, diarrhœa, and ulcers.

One European and 8 warrant and non-commissioned officers were treated: their cases terminated all in recovery.

Six deaths occurred amongst the men. In the annual report for the year 1873, the Deaths. subject of this charge, as regards its constitution and sickness, will be more enlarged on.

From the foregoing remarks and tabular statement, and from the medical history of each charge, it is evident that the native troops at Aden have enjoyed fair health during the past year. Dengue, which had laid so heavy a hand on the whole population, had subsided, and where disease in certain charges had been more than usual, there were causes apparent for the

increase. The exceptions, as regards the thoroughly improved character of the year's healthiness was in intermittent fever in the Aden troop, in the 1st Company Native Artillery, and in the Perim detachment.

This disease in the Aden troop, which gave 72 cases more than in the previous year, may be attributed to the patrolling duty in a presumed malarious tract of country, during the early part of the year.

Intermittent fever in the Native Artillery.—Into the hospital of this company there were admitted in the year 1869, while stationed at Malligam, 77 cases of fever, and in 1870, 97 cases. The strength then being 123 and 128 respectively. In the year under report 1872 with a strength of 86, there were 34 admissions. The percentages to strength would, therefore, stand as follows :—

			1869.	1870.	1871.	1872.
Strength ...	...	...	122	128	...	86
Admissions	...	...	97	77	not shown	34
Percentage	...	...	78·86	60·15	„	34·53

pointing out really, that the change to Aden had been, as regards the disease in the company, beneficial. At Perim, the number of cases admitted was 14 in a strength of 52, and out of 72 cases of disease in 1871, there were only 5 cases, whilst in 1870 in the detachment of the 12th Regiment N. I., there were 15 cases out of a total treated of 108.

This outpost I was unable to visit, and the inspection report of the Civil Surgeon, who being senior medical officer at Aden, was deputed to visit Perim for me, does not enter into the subject. Certain sanitary points brought forward by this officer, have been communicated to the Brigadier General Commanding, and Resident at Aden.

The Superintendent Medical Department at Aden, an appointment now abolished, did not consider that *that* fever was endemic in Aden, but that “it was traceable to India:” this my experience does not enable me yet to speak on; but it appears that as the sepoys are better fed at this place, they may be considered better able to withstand any influence of the kind that may exist; and, in examining into the amount of fever prevailing in regiments in the years 1870 and 1871, it does seem that the troops there appear as a rule, less under the influence of fever than in most stations of Western India.

The 5th Regiment N.L.I., was to return to Belgaum, the station which it left for Aden, soon after my inspection took place. From the excellent report of the medical officer in charge, Assistant Surgeon Welsh, M.D., it will be observed that in the past year there was a decrease in the number of sick, of 423 due to the subsidence of dengue and the decrease in fever cases. Altogether the two years' residence at Aden, has by no means injuriously affected the health of this regiment.

Some of the sanitary defective characters of the lines, *e.g.*, drainage and urinals, have been brought to the notice of the Brigadier-General Commanding.

The medical history of the Sappers and Miners 2nd company, shows that the health of the men has been very good during the year. The decrease in sick from the previous year was due to less fever, and only two cases of dengue against 70. There is no hospital for the sick of this company, but they are well attended to in the excellent hospital of the native regiment.

The general latrine of this company on the “Turkish system” attracted my attention. On two visits made to it I did not detect the slightest foul smell. It would appear that as long as the central pit lasts, from the centre of which a long shaft extends high into the air, the plan must be successful.

Removal of the contents must, however, become necessary; and, if this can be effected without nuisance, the “Turkish system” must be considered as a very excellent one for a limited number of persons.

The Aden troop, with the exception of fever, in January, February, and March, was healthy, and the men, when I visited Khora Muxee, appeared to enjoy good health. The Commanding Officer was invalided to England in consequence of fever contracted while on patrol duty.

There is no hospital to this troop. The sick are treated in their houses, or, when requiring more particular care, are sent to the regimental hospital—a very considerable distance off.

The system of sick soldiers occupying their own huts while sick, is, it is almost needless to remark, very objectionable. Harry Bawoo general No. 32, hospital assistant, has charge of the troops, and sees out-patients, and prepares medicines in the store-room of the troop, which is lent by the officer commanding for a dispensary.

There is no doubt that a small hospital is necessary, and the subject has been brought to the notice of the Brigadier-General, by whom, however, it had been previously under consideration.

The 1st company of Native Artillery, occupy lines near Steamer Point, which were in good order; the appearance of the men was fairly healthy. The sick are treated in a ward of the European soldiers' hospital, and are attended to by its establishment under the medical care of the Assistant Surgeon, British Medical Service, in charge Steamer Point.

The medical history of the departmental followers at Aden, Ordnance and Commissariat, shows that the lines of the former are of the worst description; and it is advisable that fresh lines, arranged with reference to ventilation and sanitation in general, should be built. These lines of huts are erected by the men themselves, and present the appearance more of a temporary hut—village of wanderers—than the residence of a regularly employed establishment of a department of the public service.

The situation of these lines, the arsenal and the houses of the warrant and non-commissioned officers, is, perhaps, the hottest in Aden.

Native Military General Hospital.—The hospital, where the men of these departments when sick are treated, is called the Native Military General Hospital; it is near to the Commissariat, but a long way from the Ordnance lines: this hospital is like the lines, a wretched place, utterly unsuitable to the purpose. I understand it has been already condemned, but though it has undergone this sentence, it still remains, in its hovel-like appearance, an eyesore to the camp.

In arranging for a new hospital, it would be advisable to change the site.

Some of the Europeans of the Ordnance are attended by the medical officer at the isthmus, belonging to the British Medical Service, who indents for medicines especially for them.

The European General Hospital.—This hospital, though having no pretensions to be considered a military charge, is paid for in the Military Department, consequently the annual returns and reports are submitted with military returns; but I reserve comment on its medical history for the report of the Civil Medical Department.

The Lock Hospital, when I visited Aden, was located in a part of the civil hospital set aside for the purpose; it was in medical charge of the medical officers of the native infantry regiment. There were several patients in it when I was there, and the registration and examination of the prostitutes appeared to be favourably received.

The Brigadier-General informed me that the site of the hospital was to be changed.

During the year there were admitted and remained, for venereal disease 117, discharged 113, the greatest average number registered was 38, and the greatest average number appearing for examination was 38; the average number in hospital was 33, the greatest monthly average was 9.5.

The chief disease was gonorrhœa and next to this soft chancre.

No fines were realized and the total cost of the hospital is shown to have been Rs. 1,954-1-11 including the pay of the medical officers in charge.

Water.—The water-supply at Aden is provided from four sources—

- Condensed water,
- Water from Shaik Othman,
- Water of the wells of the place,
- Water from the tanks,

Water is supplied to the troops and followers for drinking and cooking purposes, at the following rates:—

- Condensed water per soldier at 2 gals.; sweet water 3 gals.
- Condensed water per soldier at 1 gal.; sweet water 2 gals.
- Brackish water for bathing and washing.

Water from Shaik Othman by viaduct is also supplied—it is sweet, potable water, but the supply is very limited.

Well-water is brackish and quite unsuited for cooking, and it is unfit even for bathing.

Water from the celebrated tank of this place is rain-water, the tanks can only occasionally contain water, and for the last twenty months have been almost dry.

The supply of condensed water and that of Shaik Othman is fully sufficient, and, though the former is deficient in rapidity, it is excellent drinking-water, and no ill effects are known to follow its use.

The rainfall is uncertain ; the greatest fall during the last 10 years was 7 inches in 1870, and the least was in 1871, when 34 cents only were registered. In 1872, 1 inch 26 cents fell at the camp.

Vaccination in the various military charges has been carried on, and the results are as follows :—

Primary Vaccination.

Successful	...	...	...	...	...	...	...	...	41
Unsuccessful and doubtful	...	...	...	...	...	...	...	...	2
Unknown	...	...	...	...	...	...	...	...	0

Re-vaccination.

Successful	...	...	...	...	...	...	...	...	3
Unsuccessful	...	...	...	...	...	...	...	...	25
Unknown	...	...	...	...	...	...	...	...	0

GENERAL RETURN of the Native Troops, showing the amount of Sickness,

TROOPS IN ADEN.	STRENGTH AND DIED PER CENT. TO STRENGTH IN AND OUT OF HOSPITAL AND ON LEAVE.								Total strength on the 31st December 1872.	Average strength.	Average daily sick per cent. to average strength.	Average daily number of sick.	Ratio of deaths to treated.
	Christians.		Hindoos.		Mussul- mans.		Jews.						
	Strength.	Deaths per cent.	Strength.	Deaths per cent.	Strength.	Deaths per cent.	Strength.	Deaths per cent.					
1st Company Native Artillery.	86	86	6.32	5.38	0.51
2nd Company Sappers and Miners	84	...	11	...	...	...	95	96	1.45	1.4	4.54
Aden Troop	30	...	70	...	...	...	87	90	7.8	7.0	...
H. M.'s 5th Regiment N. I.	4	...	507	...	67	...	14	...	586	592	3.61	21.4	1.43
Detachment H. M.'s 5th Regi- ment N. I.	52	52	3.26	1.7	...

Mortality, Discharges by Invaliding, &c., in the Aden Presidency Division, during the year 1872.

Bombay, 1st February 1872.

PROPORTION OF ADMISSIONS TO STRENGTH PER CENT.			PROPORTION OF DEATHS TO STRENGTH PER CENT.			Invalided. Obtained sick leave.	DISEASES, ADMISSIONS, AND DEATHS.												Average number of consecutive nights in bed.	INCREASE BY			DECREASE BY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
From cholera.	From other causes.	Total.	From Cholera.	From other Causes.	Total.		General Diseases.			Local Diseases.			Injuries.			Total.				Recruiting.	Boys.	Otherwise.	Deaths.	Invaliding.	Dismissal and Desertion.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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T. B. JOHNSTONE, M.D.,

Deputy Inspector General of Hospitals, P. D., Aden and Bombay Marine.

POONA DIVISION.

Average strength present during the year ... 8,577

Average daily sick per cent. to the average strength ... 3.71

Ratio of mortality per cent. to the average strength ... 0.59

H. M.'s 1ST REGIMENT L.C.

POONA.—In Medical Charge of Assistant Surgeon J. MCALISTER ; Strength 450.

The medical history of the 1st Regiment Light Cavalry, for the year ending 31st December 1872, has nothing of a novel nature to present; indeed, in the medical arrangements of a native regiment there must be a great deal of uniformity. But a reference to the annual return will show, that the benefits to be derived from medical treatment are fully appreciated by the sowars and regimental followers.

The general sanitary condition of the regiment for the past year was of a favourable character, the admissions from all causes being 648, less by 133 than that of the preceding year.

The monthly reports of sick for the past year represent an annual average strength of 450.

The total number of cases of all kinds taken on the sick list was 675, being at the rate 1,500 per 1,000 of strength.

Of the whole number taken on sick report, 608 or 1,351 per 1,000 of strength were for diseases alone, and 67 or 149 per 1,000 of strength were accidents and injuries.

The average number constantly on sick report, during the year, was 20.2 or 44.9 per 1,000 of strength.

The total number of deaths was 4. Of these only one died in hospital, one while on escort duty at Mahableshwur, and two while on furlough.

During the year one sowar was discharged with gratuity for syphilis secondary. 12 men were pensioned: 2 for general debility, resulting from syphilis, 1 for malarial cachexia and enlargement of spleen, 1 for inability to ride through weakness, 1 for partial paralysis (analgesia of both lower limbs), and 7 for debility and old age. Twenty-two recruits were enlisted.

The following table shows the diseases by which the admissions and deaths were caused during the year:—

Diseases.	Admissions.	Deaths.	Rate per 1,000.	
			Admissions.	Deaths.
<i>General Diseases.</i>				
A.	299	...	664.45	...
B.	45	...	100.0	...
<i>Local Diseases.</i>				
Nervous system	8	1	17.78	2.22
Eye	14	...	31.11	...
Ear... ..	7	...	15.56	...
Nose	2	...	4.44	...
Absorbent system...	1	...	2.22	...
Respiratory system	3	...	6.67	...
Digestive system	86	...	191.11	...
Urinary system	14	...	31.11	...
Organs of Locomotion	5	...	11.11	...
Cellular tissue	4	...	8.87	...
Cutaneous system	91	...	202.22	...
Condition not necessarily associated with local or general injuries	1	...	2.22	...
Injuries... { General	2	...	4.44	...
	Local	64	142.22	...
Surgical operations	2	...	4.44	...
Total... ..	648	1	1,440.0	2.22

Malarial fever in its various forms, as in preceding years, stands foremost among the causes of sickness, the average number of admissions per month for the past year from this disease alone, amounting to seventy-four (24·4). The number of admissions from this affection was 186 less than in the preceding year, the whole number being two hundred and ninety-three (293), or 45·22 per cent. of the total sickness from all causes. The admissions in each month of the year arranged in numerical order were as follows:—

November 40	August 21
July... .. 37	January 20
May... .. 30	February 19
April 29	June 17
December 27	October 10
September 27	March 10

From this table it will be seen that the highest rate of sickness from this cause occurred in November, July, and May, the lowest in June, October, and March. In 1872 the highest rate occurred in May, June, and November, the lowest in January, February, and March.

Malarial diseases were observed to increase in frequency in hot weather following heavy rains. The quotidian intermittent is the most prevailing type, tertian being very much rarer, and quartan only observed in a few cases. The cold stage is generally absent, or only observed during the first attacks; the fever high and occasionally very protracted, but without very much tendency to assume the remittent type. Several of these protracted cases were observed in the month of May, their duration varied from ten days to three weeks and longer, and many of them manifested a strong tendency to relapse. The cause of this disease is as obscure here as it is generally. Perhaps the defective ventilation of the lines, and the cultivation of the soil immediately surrounding the cavalry reservation, may appear as the true cause to the adherents of two of the many theories.

In the treatment of the fever, I have endeavoured to be guided by common sense and general principles.

In the mild variety of malarial disease there is not much treatment required, for with rest, warm clothing, and a moderate dose of a mecurial combined with podophylin and a cathartic, such cases will soon recover; when, however, the fever tends to protract its course, these articles will be of little use, unless followed by quinine till cinchonism is produced. In a few of the cases quinine failed to break up the recurrent paroxysms; in these arsenic was substituted for quinine with good results. Enlargement of the spleen was but seldom met with, and when met with, could always be traced to intermittent fever. It yielded very easily to a combination of quinine and iodide of iron, aided by muriate of ammonia.

Dengue furnished three cases.

Ethnetic diseases.—The number of admissions reported under this head amounted to thirty-nine (39), a decrease from the previous years of nine (9), of which eight (8) were primary syphilis, nineteen (19) secondary syphilis, eight (8) gonorrhœa, one (1) phimosi, and three (3) epididymitis.

The prostitutes in and about the village of Ghorpuri are of the most debased and filthy kind. The disease contracted from them is in the majority of cases very virulent, and in the end renders the native soldier utterly useless for service.

Diseases of the Respiratory Organs furnished three (3) cases, of which (2) were asthma and one (1) pneumonia.

Diseases of the Digestive System.—The number of admissions under this head amounted to eighty-six (86), of which fifty-seven (57) were dysentery, eleven (11) diarrhœa, four (4) colic, five (5) congestion of spleen, one (1) jaundice, two (2) dyspepsia, and (1) gum-boil, one (1) ulcerated sorethroat, two (2) tonsillitis, and two (2) inflammation of salivary glands. In July, dysentery assumed an epidemic form among the sowars, and prevailed actively until the middle of August. I may mention here, that cholera prevailed at the same time amongst the regimental followers. The two diseases were doubtless connected by some peculiar link.

Diseases of the Cutaneous System furnished ninety-one (91) cases, of which thirty (30) were boils, nineteen (19) ulcers, three (3) whitloe, two (2) erythema, one (1) urticaria, one (1) herpes, one (1) eczema, five (5) scabies, one (1) fissure, six (6) guinea-worm, and two (2) vesication produced by blistering fly.

Diseases of the Eye.—Fifteen (15) cases, of which twelve (12) were conjunctivites, one (1) pinguecula, one (1) abscess of meibomian gland, and one (1) pterygium.

Diseases of the Organs of Locomotion.—Five (5) cases, of which two (2) were inflammation of muscles, two (2) inflammation of tendon, and one (1) neuralgia of knee joint.

Injuries.—Sixty-six (66) cases, of which fifty-five (55) were contusions, five (5) sprains, two (2) burns, one (1) rupture of muscle, one (1) dislocation, one (1) simple fracture of tibia, and one (1) fracture of clavicle.

Small-pox invaded the cavalry camp in April, the people affected being with one exception—a sowar—native followers. Twelve (12) cases occurred. As to how the disease was introduced I am sorry to say that I have nothing definite to state. In the hot weather the disease assumed an epidemic form in and around the city of Poona. The epidemic was of a mild type, the general health of those affected having remained comparatively good during the course of the disease.

Cholera.—It is worthy of note that during the month of July cholera invaded the syce lines. Of the eight (8) cases reported, six (6) died, and two recovered notwithstanding that the grass-cutters and syces, as a matter of necessity, continued to keep up free communication with the sowars, yet not a single case occurred among the latter. I lament my inability to trace the disease to its cause. That the water-supply was not the cause is obvious from the fact, that the sowars use the same wells as the followers. I consider the water in the wells used by the cavalry to be good and wholesome. The evil is not in the water; there is the far greater evil of eight hundred and thirty-five (835) low-cast followers huddled together as in pigsties—ill-fed, ill-clothed, and ill-lodged; and, during the rainy season, living in an atmosphere charged with decomposing matter of vegetable and animal origin. The remedial measures are obvious. Let the syces and grass-cutters have new and spacious huts, built on a well-selected site, let them have better pay, to enable them to procure sufficient food and clothing, and let them, while in the lines, be under strict military supervision.

It would seem that these measures of improvement might be conceded without any great expenditure of money. Dr. Maitland, Deputy Inspector General of Hospitals, P.D.A., in his report upon the outbreak of cholera among the syces, urged very strongly the desirability of erecting new lines on a well-selected site. This is a sanitary measure of the highest importance, which, when completed, will have great influence in preventing disease within the cavalry reservation.

The Cavalry Lines are built on an elevated piece of ground, 191 yards to the north of the G. I. P. Railway. To the north of the lines at the distance of 771 yards, runs the river Moota Moola in an easterly direction. To the east and west the cavalry reservation abuts upon fields under cultivation. On the low ground between them and the river, stand the syce lines. The site has a gradual slope towards the river, thereby allowing good natural drainage. The lines consist of 12 rows of houses, 33 yards apart, parallel to each other, and ranging east and west. Their great sanitary defect is want of ventilation. The horses are fastened by picket lines in front of the houses. In consequence of this arrangement the atmosphere of the lines, during the rainy season, is poisoned by the decomposition of animal and vegetable matter, and the houses in many instances rendered impure from overcrowding. Passing south-west from the cavalry lines, and crossing the railway from Poona to Sholapur, the village of Ghorpuri is reached, with all its filth and stench, standing nearly midway between the cavalry lines and the Ghorpuri barracks; and when I say that it is one of the most fruitful sources of disease to the cavalry and infantry soldiers, I do not think I shall be accused of exaggeration by those who have given the subject consideration. On various occasions I have in special reports referred to the importance of improving the sanitary condition of this village, chiefly as affecting the health of the European and native troops located in its neighbourhood. With this object in view, it has been proposed to transfer the village along with the fields surrounding it, from the civil administration to the cantonment authorities, and such would certainly be a step in the right direction. Should, however, the village still continue to be a nuisance and source of disease to the troops, no more useful sanitary work could be desired than the levelling of the entire village to the ground.

The Syce Lines.—The mud huts occupied by the native followers, 200 yards to the north of the cavalry lines, have been reported unfit for human habitation, on account of their objectionable location and construction. The huts are overcrowded and inhabited by people who set at defiance every sanitary law; hence, cholera and small-pox prevailed amongst them during the past year. The necessity of building new syce lines, on a proper site, is beyond question.

The Cavalry Hospital.—A substantial stone building, 40 yards south of the lines, fronting west, and standing on the northern side of G. I. P. Railway, is excellent in plan and furnishes few grounds for criticism or suggestions for improvement. The building is considered to be the best of the kind in the Bombay Presidency—the ventilation is complete.

The hospital has a capacity for 29 patients, which number may be increased, if an emergency arise by fitting up the verandahs with beds and screens. The highest number under treatment at any time was forty, eleven of which were accommodated in the verandahs.

Vaccination.—From the very commencement of the epidemic of small-pox, the sowars and followers were constantly urged to resort to vaccination and re-vaccination, as the most effectual means of preventing infection and of stamping out the disease. A great majority of

the sowars and native followers have submitted to the operation; and I am glad to state, that through the faithful and efficient services of my hospital assistants, vaccination is still being placed within the reach of every individual in the regiment.

Water-supply, Source and Quality.—The supply of water for the cavalry is obtained from wells and is of good quality, but occasionally inadequate in quantity. In the hot season, when a free use of water is most essential to the well-being of the regiment, there has been a scarcity, which has interfered with the comfort, if not with the health, of the men. This evil will, I understand, be remedied sometime hence, by the laying on of an unlimited supply of good water from the Kurruckwasla Canal.

The extremes and means of temperature, with the amount of rain for the months of the past year, are as follows:—

Months.				Rain.		Remarks.
	Maximum.	Minimum.	Mean.	Inches.	Cents.	
	Degrees.	Degrees.	Degrees.			
January ...	82	58	70	...	...
February ...	92	61	76	...	...
March ...	97	67	82	...	...
April ...	97	69	83	...	17	
May ...	97	73	85	...	36	
June ...	96	73	84	6	54	
July ...	86	73	79	6	88	
August ...	85	73	79	...	98	
September ...	83	72	77	4	27	
October ...	87	60	73	...	57	
November ...	86	59	72	...	...
December ...	86	56	71	...	...
Total...				20	22	

State of the Regiment on the 31st December 1872.

Strength of regiment (excluding European officers) ...	...	...	...	...	...	...	482
European officers ...	...	...	...	...	...	...	6
Hindoos 294, Mussalmans 181, Indo-Britain 1, Christians 6 ...	...	...	...	...	...	...	482
Married men 189, children 294 ...	...	...	...	...	...	...	483
Recruits at riding drill 16 }	...	...	...	...	...	...	33
Recruits at foot drill 17 }							
Men under 2 years' service ...	...	...	...	...	...	...	61
Court-Martial during the year ...	...	...	...	...	...	...	8
Strength of guard by day 26 by night 29 ...	...	...	...	...	...	...	55
Nights in bed ...	...	...	...	...	...	...	7
Regimental Schools { Adults ...	...	...	...	...	...	...	25
Boys ...	...	...	...	...	...	...	55
English Class { Adults ...	...	...	...	...	...	...	4
Boys ...	...	...	...	...	...	...	15
Died out of Hospital ...	...	...	...	...	...	...	3

Native Establishment.

Native Accountant	1
Chowdree ...	...	...	...	...	...	...	1
Moosudee ...	...	...	...	...	...	...	1
Peons ...	...	...	...	...	...	...	6
Syces ...	...	...	...	...	...	...	172
Grass-cutters ...	...	...	...	...	...	...	115
Bullock Bhistee per troop 1 ...	...	...	...	...	...	...	6

Latrine Conservancy.

Filth-cart	1
Sweeper	4

Line Conservancy.

Sweepers	9
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H. M.'s 1st GRENADIER REGIMENT N.I.

POONA.—In Medical Charge of Surgeon T. MILLER; Strength 677.

During the past year the health of the regiment has not been nearly so good as it appears from the hospital records for some years back to have been. There has been a much larger number of admissions into hospital than formerly, and this chiefly on account of an epidemic of dengue fever having gone through the regiment which at one time, during the months of July and August, was very much crippled from this complaint. During these two months 520 cases of dengue were treated, and the average daily sick was in July 78·4, and in August 58·6; the greatest number of sick under treatment at one time was 122 on the 21st July.

There has also been an increase in the number of cases of intermittent fever, as compared with the last year or two; the number of cases treated having been 343 in 1872, against 146 in 1871.

On account of the increase in the number of cases of ague, and the epidemic of dengue, the total number treated is three times greater than during the previous year—that for 1872 being 1,225, against 426 for 1871.

Of general diseases, there remained in hospital on 1st January 1872, eleven cases, and there were admitted during the year 949, making a total of 960. Of these 948 were discharged, 3 died, and 9 remained under treatment.

Of local diseases there remained 5; there were admitted 201. Total 206. Of these 196 were discharged, 3 died, and 7 remained under treatment. The most prevalent of these were diseases of the digestive system—112 of other diseases not coming under the above heads—and of injuries, general and local, there were 59, all of which were discharged.

The most prevalent were fevers. Chronic rheumatism 67 cases, and 65 were discharged. Contusions 50, all discharged. Dysentery 39—38 discharged. Abscess 36—34 discharged. Diarrhœa 19—18 discharged.

Syphilitic affections have not been numerous—4 cases of primary and 6 of secondary having been under treatment. Of eye diseases there were 6, and of gonorrhœa 1 case.

Two cases of cholera occurred amongst the sepoys, one of which was fatal, and 3 amongst the followers of the regiment, of which also one was fatal. These cases were admitted into hospital for treatment, after having been ill for 8 or 12 hours from premonitory symptoms, and were in the stage of collapse, and generally pulseless. The treatment was the giving of stimulant mixture with ammonia, small doses of arrack, and sometimes on admission a pill of calomel and opium. A solution of bicarbonate of soda was given for thirst, and as much cold water as the patient desired. Mustard poultices and liniments were also employed.

Of small-pox 6 cases occurred amongst the sepoys—4 recovered and 2 died; and amongst the followers, 1 male, 6 females, and 4 children had the disease, all of whom recovered.

Although the dengue fever was more or less prevalent in the station during the hot months, it did not break out in the regiment until the beginning of July and after the rains had set in. The sepoys' huts being roofed with flat tiles, the rain easily penetrated through them, and, of course, the inside of the huts are damp and uncomfortable; and, on account of the damp and cold, the men are more likely to be affected with fevers, more especially as they do not use charpoys but sleep on the mud floor. Whether this had much to do with the outbreak of the dengue, I cannot say, but at all events it was not in its favour, when once it got amongst the sepoys. The complaint commenced first with fever, sometimes severe, sometimes mild, and lasting usually for two or three days, and with pains in some of the smaller joints; sometimes pains of the limbs were complained of from the first, and in others, they came on after the fever had almost gone. Many cases did not report themselves sick for the first day or so, and were admitted after the fever had almost left, and the pains of limbs and weakness were then the most marked symptoms. There was very little eruption to be noticed on the body at any period of the disease; it was absent almost in every case on admission. The treatment consisted usually of a purgative at first, and then diaphoretic medicines—nitrate of potass, &c., sometimes combined with vinum colchici. Opiates were also given, and extract of belladonna, and liniments of turpentine, opium, and aconite. The treatment with belladonna did not seem to be more beneficial than the other. Afterward quinine and iron with strychnine were given as tonics. The cases usually got better after a week or so, and no bad symptoms remained, except stiffness of the joints, which was relieved by the use of liniments. None of the cases were fatal.

The dysenteric cases were treated with small doses of ipecacuanha, blue-pill, and opium, with extract of gentian. Large doses of ipecacuanha did not seem to be required. Quinine and other tonics were given after acute symptoms abated. One case of extravasation of urine remained under treatment. It was admitted at first as a case of acute urethritis. There was no history of

stricture or of any injury to the parts, and, after some days, signs of extravasation showed themselves, apparently caused by the opening of an abscess about the neck of the bladder. Incisions were made to evacuate the urine and matter, and there has since been considerable sloughing of cellular tissue of scrotum and penis. The case hitherto has done well under the treatment with plenty of stimulants, and I have now good hopes of recovery. One case of fibrous tumour over the parotid gland was removed and did very well; but there is now a tumour inside the tonsil, and which seems to be connected with the bone. This could not very well be removed, and the treatment has been with caustic lotions and carbolic acid. It has now taken on a sloughing action, and will, I think, slough away without any dangerous symptoms, as the patient is otherwise in good health.

The average daily sick was 30·6, the proportion of sick to strength per cent. 4·5, the proportion of admissions to strength per cent. 179·6, and the proportion of deaths to strength per cent. 0·8.

One case died while on sick leave, from remittent fever, and another from phthisis pulmonalis.

Vaccination has been carried out in the regiment and amongst the followers, as carefully as possible, the total number of vaccinations being 91, of which 79 were successful, and 12 not so. During the year 13 sepoy were invalided, and 41 recruits enlisted.

The strength of each caste in regiment has been Europeans 7·5, native Christians 19, Mussulmans 73, Hindoos 575·8, and Jews 2; and the admissions into hospital of each, Europeans 5, native Christians 17, Mussulmans 80, Hindoos 1,101, and Jews 1.

The lines occupied by the regiment are in very good order, except during the wet season when the roofs of the huts, which are made of flat tiles, leak very much, and the rooms are often very damp and uncomfortable. Government allows a sum of money every season for repairs, but it does not seem to be sufficient for these being done in a proper manner. The drainage is natural, the lines sloping down towards the west. I consider that the latrines are made too near the lines and the regimental bazaar, not being much above 30 yards' distance; and at some seasons the effluvia is complained of, though every means is taken to have them kept as clean as possible. The wells from which the water is taken, are also too near the latrines, and when treated roughly by the permanganate of potash shows signs of organic matter. The drainage of the lines slopes down towards the wells, and thus organic matter may be introduced.

The hospital and outbuildings are in good repair, but the quarters for the hospital assistants are very second-rate; and new ones are required, as also a latrine for families of the hospital attendants.

The hospital establishment is good, and also the conduct and character of the medical subordinates. First Class Hospital Assistant Bhowanee Sing has given me satisfaction in the discharge of his duties.

H. M.'s 2ND GRENADIER REGIMENT N.I.

POONA.—In Medical Charge of Surgeon F. H. PLUMPTREE; Strength 668.

Throughout the whole of the year, the regiment has occupied the same lines, hospital, and other buildings that they did in the year preceding. It is, therefore, unnecessary to enter into a descriptive topographical account of that which furnished a part of my last annual report, and a simple strictly medical history of the regiment is all that is required.

In the month of January nothing occurred in the shape of epidemic diseases. In February, two cases of small-pox came under treatment; one a young sepoy who bore marks of previous vaccination (this was a confluent form of disease), the other, the wife of a sepoy who had been inoculated in childhood, and who had the disease in a very modified form.

In the month of March four cases occurred among the families of the sepoy and the regimental camp followers. In April there were eleven admissions from the same cause and from the same class. After this, the disease entirely disappeared. The type generally was mild, and of the whole 17 cases treated not one died, and the convalescence in all was speedy and satisfactory.

In April, dengue made its appearance in the latter part of the month, reached its maximum in July, when 91 cases were admitted, and finally disappeared in October. Those admitted in November were relapses, as indeed were many of those who appear under the head of admissions. It would be difficult to say, therefore, what the precise number of cases were occurring in the regiment, but large as it is, it forms a favourable comparison with either the 1st Grenadiers N.I., or the 8th Regiment N.I., stationed at the same time in Poona.

The following present the monthly progress of the disease in the shape of admissions:—

April	...	...	...	...	4
May	...	...	...	...	16
June	...	...	...	...	44
July	...	...	...	...	91
August	...	...	...	...	36
September	...	...	...	...	18
October	...	...	...	...	22
November...	...	...	...	...	6
Total...					237

During the rains there were several admissions on account of dysentery, not of an acute type, but obstinate and continuing for a long time in a chronic form.

Cholera existed for some months in and around Poona; not a single case occurred in the 2nd Grenadier Regiment, though all the regiments, European and native, at the station, suffered more or less severely from the epidemic. I have no theory to suggest in explanation of the immunity the regiment enjoyed, nor were any precautions taken, which, as far as I am aware, were not equally carried out in those regiments which were affected.

During the year seven deaths occurred; as they have been each reported upon in the monthly returns, it is unnecessary to recapitulate them here.

I regret that some delay has occurred in the preparation of this report, due to my sudden and unexpected departure from Poona for Aden on the 11th January, preventing its preparation before that date. The record books were with the head-quarters of the regiment, and it was not until the 17th instant that I have been able to have access to them.

H. M.'s 8TH REGIMENT, BOMBAY N.I.

POONA :—In medical charge of Surgeon A. W. G. ADEY; Strength 660.

The average strength of the 8th Regiment N. I., has been 660. The total of admissions, 1,493. The daily average number of sick for each month has been as follows :—

January, 19·8; February, 17·9; March, 24·1; April, 38·2; May 44·2; June, 45·6; July, 35·2; August, 29·5, September, 33·5; October, 38·9; November, 43·7; December, 35·4.

The prevailing diseases, intermittent fever and dengue, the latter from May to October inclusive. Three deaths have occurred. Thirty-nine recruits have joined during the year. Twenty-eight men have had sick leave during the year; and thirty-three have been invalided.

The regimental lines have been condemned, and preparations are being made for the construction of the new ones on the eastern side of the cantonment. The situation of the present lines is open and well exposed to the breeze, but the site is too level to make drainage effectual; the nature of the soil too tends to the lodgment of water; both of these defects will be remedied in the site chosen for the new lines.

The hospital is well built, divided into two wards, floored with stone, and, as far as space is concerned, fairly adapted to the ordinary requirements of a native regiment. The space provided for inlet and outlet of air are sufficient in area, but are ineffectual, owing to faults of construction. The building faces north and south or nearly so, and on the eastern and western ends, one small window only exists, by which air can enter. The dispensing and writing room, moreover, is placed between the two wards, and partially obstructs the passage of air through the building. A separate ward is much wanted for the accommodation of persons whom it may be desirable to keep apart from the other patients; two, small, dark, ill-ventilated closets are the only accommodation of this kind existing. No accommodation exists in the hospital, or in any out-buildings for the performance of *post mortem* examinations. The cookrooms and houses of the hospital attendants are too close to the main buildings, and to their proximity, at one end of the building, is partly due the ineffectual ventilation. The distance between the present hospital and the site for the new lines, is about three fourths of a mile.

The conservancy of the lines is well looked after. The Trench system is the one in use. The trenches are situated at about 300 yards distant from the lines to the northward.

The water-supply is in quantity sufficient, but its quality is suspicious. The well from which the generality of men draw their supply of drinking-water is too near to the trenches used for the deposits. This was pointed out some months ago to the commanding officer, and since that time the trenches have been dug as far away from the wells as possible. I believe that no other piece of ground, except that in use, would be available for the same purpose. I am not aware of any objection to the other well used by the men and their families.

As mentioned above, 1,493 cases have been admitted to hospital during the year : of these admissions, 723 have been for fever and ague, 224 for dengue, and 60 for dysentery. There are 151 admissions under the head of rheumatism, of which 56 were accompanied by more or less pyrexia ; no case of severe rheumatic fever, however, has been under treatment. The patients mentioned as suffering from chronic rheumatism were, for the greater part, weakly men, among whom 27 were re-admissions. The men have been worked hard during the year, and every man at all subject to any chronic ailment has not only really suffered, but has naturally made the most of his infirmity to escape what to him is overwork. Among these patients who have been under treatment for dysentery or dysenteric diarrhoea, only one case has been treated in which recovery has not been complete ; in this instance, the disease became chronic and lingering, and the patient, who was not so far reduced in strength but that he was able to travel, was sent away for change of climate. A few cases were complicated with scurvy and with hepatic derangement, but they all yielded to treatment. 224 cases of dengue were admitted : of these one only was a really severe case ; in this instance the pains in the joints were considerable and accompanied by some effusion, and there was a good deal of general debility. The temperature rose to 104° during the second day of fever, with a good deal of pain ; on the 6th day, there was an eruption all over the body, and the temperature, which had been natural after the second day, rose again about a degree and a half for about 24 hours. The rheumatic pains in the joints continued for upwards of two months ; in fact, no real improvement commenced till about the end of June, and the man was eventually allowed sick leave, as he had been much weakened by long-continued pain. Repeated counter-irritation with mustard plasters and blisters in this, as in all the other cases, has seemed to have been the only treatment productive of any good effect. The characteristic eruption was only observed to occur in 26 cases. The average duration of treatment of these was 7·2 days ; the maximum 14 : the highest temperature observed was 104°, but this only in 2 cases. The cases in which the eruption did not appear were, as an almost invariable rule, of slight character ; both as regards the disease itself, and as regards the accompanying rheumatic pains. Sore throat occurred in a small proportion of cases, and did not appear to be connected with any other symptom. It will be observed that a very large number of men have been the subjects of fever and ague during the year : this I believe to be mainly attributable to their long residence in Ahmadabad, and, in some degree, to their having been worked rather hard since they came to Poona. Among these were two cases of remittent fever, in which partial paralysis occurred. Each of these cases was treated with tincture of ergat of rye, and with galvanism. They each made a good recovery. Subcutaneous injections of quinine have been used in all cases, where from any cause it was not advisable to administer the alkaloid by the mouth. In one or two instances, where it was injected under the skin of scorbutic patients, suffering from fever, it was followed by troublesome ulceration : since then I have always used a solution of quinine in glycerine, and with this solution no instance of ulceration has occurred.

SANITARY REPORT OF THE SENIOR MEDICAL OFFICER ON THE HEALTH OF THE NATIVE
TROOPS, FORMING THE GARRISON OF POONA, DURING THE YEAR 1872.

The health of the corps of native troops forming the garrison during the past year has been, with the exception of that of the 8th Regiment, good. The men of this regiment arrived from Ahmadabad in February last, and suffered much from fever. The health of the regiment is now, however, improving.

Table showing the sickness and mortality among the native troops forming the garrison of Poona, during the year 1872 :—

CORPS.	Average Strength.	Percentage of			Average Daily Sick.	Cubic space per man in Hospital.	Prevailing Diseases.	REMARKS.
		Treated to Strength	Deaths to Strength.	Deaths to Treated.				
1st Regiment L. C. ...	450	150·0	0·22	0·15	20·2	1,140	Ague and Dysentery. Ague and Dengue. Fever and Dengue. Fever, Dengue, and Rheumatism. Fever and Dysentery.	
1st Grenadier N. I. ...	667	180·8	0·8	0·4	30·6	1,037		
2nd ditto ...	668	158·9	0·1	0·6	28·2	1,700		
8th Regiment N. I. ...	660	233·0	0·4	0·2	33·8	1,000		
17th ditto ...	348	5·3	...	...	11·4	Not given.		
Staff and Details ...	991	43·7	0·3	0·6	15·8	782		
Total...	3,784	771·7	1·37	0·33	140·0	5,659		

The water-supply is good in quantity but the quality is suspicious.

Prevailing diseases have been intermittent fever and dengue: of the latter no cases are now under treatment.

Vaccination has been carefully and successfully carried out in all corps.

The accommodation for troops is reported to be sufficient by the various medical officers in charge. The lines of the 8th Regiment are in a bad state, but as new lines in a different locality are to be built, it is not necessary to refer to any details. It has been recommended by the Commanding Officer and Medical Officer of the 1st Regiment Light Cavalry, that new syce lines be built.

With reference to conservancy, the Medical Officer 1st Grenadiers reports conservancy system as good; but, at the same time, states that he considers the latrines are placed so near to wells from which the men draw drinking-water, that the purity of water-supply is endangered.

1st Grenadiers, 1st Light Cavalry, 17th Regiment, and Staff Hospital conservancy arrangements are good; and 8th Regiment conservancy arrangements good; but the well from which the principal number of the men draw their water-supply is too near the trenches used for deposits.

DETACHMENT H. M.'s. POONA IRREGULAR HORSE.

DHULIA.—In Medical Charge of Assistant Surgeon G. BAINBRIDGE; Strength 151.

The number of treated was 62, of whom 61 were newly admitted. There were no deaths in hospital. The number of discharged was 51, viz., 46 to duty, and 5 on sick leave. Eleven men remained in hospital at the end of the year.

The sickness has been less than in any of the previous three years, and only slightly greater than that of 1868, when there were only 55 cases in hospital. The reduction was in the number of fever patients, of whom there were only 29 admitted.

Ague.—Some of the cases of ague from the outposts were rather severe and occasionally complicated with enlargement of the spleen and slight bronchitic affections; but, I am happy to record, that, owing chiefly (as it appears to me) to the men's good constitutions, they all recovered satisfactorily. Three men who suffered from this disease were sent on sick leave when convalescent.

I have nothing particular or new to record in the way of the systems or treatment of fever. I have as usual trusted chiefly to quinine, aided by stimulants, purgatives, emetics, and salines. These remedies have in men of this detachment worked with efficacy. I have not found it necessary or advisable to use quinine hypodermically; the irritation caused by the syringe, and the delay in introducing the medicine, are objections to the regular adoption of this method, and patients prefer to take it by the mouth.

Scalp Wound.—A sowar fell from his horse in April and sustained a slight wound of the scalp. It did not appear at the time that the periosteum was injured, but two small pieces of bone subsequently exfoliated. There were no bad symptoms, and the man was sent on a month's sick leave in July.

Cholera.—A moderately severe case of cholera occurred in August, but recovered quickly under the use of calomel and the stimulant mixture described in Aitkin's "medicine," together with tincture cantharidis.

Conjunctivitis.—In October a very bad case of double ophthalmia was admitted, which afterwards became complicated with ulceration of both corneæ and severe chemosis. The man was treated chiefly by leeches, strong nitrate of silver drops, quinine, and opium, and application of belladonna to the eyelids. He was almost totally blind for three or four days, but made an excellent recovery and regained sight completely with clear corneæ.

Wound of the Back, &c.—Sowar Russool Mahomed, who was attacked at Shahda outpost on the 3rd October by one of his comrades, who stabbed him in the right arm and back with a sword, and who had been treated by the hospital assistant at the place until sufficiently recovered to send in here, was admitted on the 29th October. The wound in the right forearm had healed, that in the back was fast closing up, a sinus two inches deep only remaining. The sword had evidently been used whilst the wounded man was lying in a semiprone position, at point No. 3 from the hip, and had entered the back immediately to the left of the spine, about two-and-a-half inches above the level of the crest of the ilium. From this point, it penetrated upwards and outwards, and had made its exit just below the tenth left rib, in a direct line between the axillæ and iliac spine; the superior wound, which is completely healed, seems to have been small as if only the point of the sword had penetrated it. The inferior orifice or wound entrance was still open as above stated. There is no discharge from it worth speaking of, and no tendency to inflammation. The kidney would appear to have escaped

injury, or can only have been slightly wounded. The case did well, and the man resigned the service in December. There was permanent stiffness in one of his fingers, which had been cut in seizing the sword, and he had occasional pain in the loins during micturition.

Reduction of Outposts.—All the detachments at outposts, except those at Sowda and Jamneir, were re-called to Dhulia, during the month of December, their presence in the hills being considered unnecessary now; thus a great cause of sickness in the regiment, and one which would have produced far more serious effect among men of less robust constitutions than are commonly found in the Poona Horse—I mean residence in the malarious district of Tullowda, Tarabad, Dhyel, and Shahda—has been discontinued; and I have no doubt that the sickness of the Khandesh detachment, which is already comparatively small, will be now much reduced.

Lines.—The lines are in the same unsanitary state as reported last year, and there is now very deficient accommodation for the increased number of men at this station. I believe new lines are sanctioned, and hope their erection will not be delayed.

Deaths out of Hospital.—A sowar, Shaik Jumal, æt. 24, died at Shahda on the 28th June, of fever.

H. M.'S 17TH REGIMENT N.I.

DHULIA.—In Medical Charge of Surgeon R. DICK; Strength 613.

At the termination of the year 1872 the regiment was on the march from Kolhápúr to Dhulia, within 26 miles of the latter station, where it arrived on the 2nd January. It remained there till 6th November, when the head-quarters and right wing marched for Bombay, where they remained from 11th November to 20th December, and on the latter date proceeded by rail to Poona.

The numerical return shows the sickness of the whole regiment up to November 5th, and of the right wing from that date till the end of the year, the left wing with all the men who were on the sick list on November 5th having been left at Dhulia.

The health of the men has not been good; in fact worse than it has been for many years, as might be expected from their having been stationed at a notoriously unhealthy place during an unusually unhealthy season. The monsoon rains of 1871 had failed almost entirely, and the temperature during the first five months of 1872, registered by the standard thermometer, was considerably above the average, and to this unseasonable weather a considerable portion of the sickness may be attributed. The percentage of daily average sick to strength was 4·2, of treated to strength 135, of deaths to strength 6, and of deaths to treated 5.

The prevailing diseases were ague, conjunctivitis, and dysentery. The first contributed 287 or more than one-third of the total admissions. Many of the cases were slight and left no perceptible ill effects on the constitutions of the sufferers; but a few were accompanied with disorder of the liver or spleen, and some men suffered repeated relapses of aguish attacks, and were much debilitated thereby.

Conjunctivitis contributed 89 admissions, most of them in the months of August, September, and October; some of the cases being severe with considerable chemosis and small ulcers and superficial opacities of the corneæ. Solutions of nitrate of silver, alum, sulphate of zinc and acetate of lead, were used in different cases, and the patients were all discharged cured, 6 being first transferred to the left wing hospital. In the early stage of some of the more severe cases, a solution of nitrate of silver gr.xx, to aqua ʒi was brushed on the conjunctivæ of the everted lower eyelid, the superfluous solution being washed off before the eyelid was replaced. Two or three applications acted very satisfactorily in such cases, but after the acute symptoms had been subdued, they caused severe pain, and seemed to be less efficacious than weaker solutions.

Dysentery is the third disease as regards frequency of occurrence; but, probably, the dangerous nature of this affection, as well as the lasting ill effects it often produces on the men's health, entitle it to the first place in importance. There were 82 admissions from this cause, and, although many of the cases were severe and obstinate, they all, with few exceptions, recovered, to all appearance perfectly. A few, however, suffered from prolonged debility and loss of tone of the chylopoetic viscera: four of these were granted sick leave to their native countries, one died, seventy-six were discharged to duty, two were transferred to the left wing hospital, and afterwards discharged, and three were shown as remaining. This disease was most prevalent from May to August inclusive, the extreme heat and the subsequent damp and cold of the rains being the probable exciting cause.

Of the different castes and races in the regiment, those whose native climate differed most from that of the place, in which they were living, suffered most severely from this affection; the Punjabees and the Purdasees, in proportion to their numbers, contributing a much larger number of admissions than the Mahrattas or Parwarries. The treatment has been much the same as described in former reports, the principal item being ipecacuanha. Large doses seemed most efficacious, when patients could bear larger doses; but, after considerable experience of the use of this drug at Kolhápúr, as well as in Dhulia, I have found the large doses, no matter how combined or administered, very apt to produce severe vomiting, and not so efficacious as I formerly found them in Nasirabad, or as I have lately found them in a few cases in Bombay.

There were four casualties during the year—one from scurvy with latent pneumonia, one from phthisis pulmonalis, one from dysentery, and one from pneumonia with pleurisy.

One case was returned as poisoning. The patient was a havildar, a native of the Punjab, who had taken some country medicine, probably a preparation of the “nerium odorum,” which produced vomiting and purging but not to any great degree. He was cold and almost pulseless when brought into hospital, and continued in this state for many hours. Stimulating emetics, the stomach pump, and stimulants, were used and hot bottles applied to the extremities; he gradually revived, having vomited and passed by stool a peculiar dark green fluid. He complained of headache and salivation without mercurial fœtor, for several days afterwards; also of sore throat, probably caused by the stomach pump tube which he pulled out several times when it was being used.

Private Kaelap Sing was a sentry at the Treasury on the evening of the 29th September, when his musket, which was loaded with ball, went off accidentally and wounded both his hands. A portion of the web between the thumb and index finger of the left hand was blown away, the flexor longus pollicis tendon was exposed, and a portion of the first phalanx of the thumb splintered off. The bullet also passed through the right hand portions of the metacarpal bones, and tendons of the middle and ring fingers were blown away, and other parts were much injured. There was some bleeding which, however, was controlled by pressure, and the wounds were very painful and much inflamed for some time; but they progressed favourably, and were healing rapidly, when he was transferred to the left wing hospital: he was afterwards granted sick leave.

Dhulia town and cantonment are well known to be very badly situated on low ground, surrounded on nearly all sides by higher land. The lines are placed on ground so little elevated that they cannot be properly drained, and the soil seems retentive of moisture, and highly malarious, and the ground surrounding camp during the monsoon is a good deal overrun with rank vegetation which it is difficult to keep in check.

The lines are constructed on the standard plan and are in fair order; but it seems to me that in so extremely hot a station as Dhoolia, the huts should be spread over four times as much ground as they occupy.

There is no arrangement for ventilation of the huts, or for the escape of smoke, except the doors which are small, low and insufficient for this purpose, consequently the heat inside the huts is usually intolerable and the smoke is torturing, as I have often experienced when visiting the huts in the hot weather and rains: and I have no doubt that to these circumstances a portion of the sickness and mortality of the sepoys and a large portion of the great mortality of their families, should be attributed.

The so-called Dry-earth conservancy was followed; but complaints were made that the manure yard was an intolerable nuisance, and there was difficulty in finding suitable place for this purpose at a convenient distance. It was proposed to adopt the Trench latrine system, but a sufficient extent of land was not obtainable beyond the minimum distance from the lines, and the proposal was not carried out.

H. M.'S SAPPERS AND MINERS.

KIRKEE.—In Medical Charge of Surgeon Major W. DAVEY; Strength 407.

1. Leaving out the present dilapidated condition of the lines, and the deficient hospital accommodation—questions which my predecessor has been at the trouble thoroughly to expose—there seems but little to remark on, excepting the health of the corps during the past year, which has been very good.

2. The new lines are in course of construction, but will probably not be completed until the close of the year. I do not know what are the plans or arrangements for hospital accommodation, but it should not be overlooked, that provision is necessary in this respect for Europeans and natives, inasmuch as there is always a certain number of the former with the corps, and that there is a probability of this number being raised to one hundred. Separate hospital accommodation for the Europeans will be required, with a male and female ward, as well as a lying-in ward, the necessity of which will be very much felt when the European non-commissioned officers are removed to the new site.

3. The question of water-supply should be considered, but concerning this, there ought to be no difficulty. Water from the Pashan valley is already brought into Kirkee, and the expense to cross it over the lines to the new site would not be great; but, whether great or small, I know of no other source available; the river-water should not be used for drinking purpose, and there are no wells on the ground. And if wells were sunk, they would very quickly become polluted, and very probably would fill from a polluted source.

4. The health of the corps, during the year, has been very good, and the mortality inconsiderable; the average daily sick has been reduced nearly $2\frac{1}{2}$ per cent., viz., from 10·4 for 1871 to 8·0, and the percentages of treated to strength and of admissions to strength have been reduced from 96·7 and 93·9 for 1871 to 73·9 and 72·7, respectively, for 1872.

5. The mortality of the year, as already observed, has been inconsiderable, and contrasts favourably with the preceding year, the percentage of deaths to strength and to treated being 0·4 and 0·6, respectively, as compared with 1·5 and 1·5 for 1871.

6. The total number of admissions during the year has been reduced by 74 in comparison with the previous year, viz., 296 admissions in 1872 against 370 in 1871.

7. Of the whole admissions, the class General Disease forms the greater share, numbering 202 and giving percentages of 61·4 and 6·7 of the sub-divisions A and B (of which the class consists).

8. Sub-division A is made up of small-pox 2, dengue 12, febricula 53, ague 110, remittent fever 2, mumps 2, and erysipelas phlegmonous 1. Total 182 admissions.

9. Sub-division B comprises lumbago 1, chronic rheumatism 11, soft chancre 2, true-leprosy 1, scurvy 4, and general dropsy 1. Total admissions 20.

10. In 1871, these two sub-divisions gave, respectively, 233 and 19 admissions, or percentages on total admissions of 62·9 and 5·1, which collectively bring up the percentage admissions of the class to within a decimal of what the same class gives in the present year, viz., 68·1 for 1872 as compared with 68·0 for 1871.

11. The next class to be noticed is Local Disease, and following the example of my predecessor, I introduce these in the following comparison table:—

Sub-Divisions.	1872.	1871.	REMARKS.
Disease of the Nervous System	1	5	Decrease 4.
„ of the Eye	9	10	„ 1.
„ Circulatory System	3	...	Increase 3.
„ Respiratory System	10	15	Decrease 5.
„ Digestive System	21	19	Increase 2.
„ Urinary Organs	4	...	„ 4.
„ Cellular Tissue	7	8	Decrease 1.
„ Cutaneous System... ..	5	19	„ 14.

In three only of these sub-divisions has there been an increase, viz., circulating system 3, digestive system 2, and urinary organs 4: total increase 9; while on the remainder, a decrease of 25 is shown, or percentages on admissions for 1872 and 1871 of 20·2 and 20·5 respectively.

12. It may be interesting to note how closely the admissions of the above two classes of disease approximate for the years 1871 and 1872.

13. The next heading of disease to be observed is, that—“Not associated with Local or General Disease”; and here we have 2 admissions during the year, one of which died, see paragraph 17, and the other was discharged to duty.

14. No admissions or deaths from poison occurred during the year.

15. The last remaining head to be noticed is "Injuries, Local and General," of which there are 32 admissions during the year, as compared with 41 in the previous year; by far the greater number of these were from causes incidental to the work of the sapper, such as blows from working tools, and splinters from wood or stone whilst at work; I do not suppose these will ever be prevented, but shoe-bite adds largely to the number of this class of disease, and is certainly preventible. None of these cases call for further remark excepting—1st, a case of "green stick fracture" occurring in a lad of 14 years of age; in this case the bone bent was the radius of the left arm, and was brought about by gymnastic practice; but as there has since been considerable amount of bony deposit around the seat of injury, it may be questioned whether some partial fracture of the bone did not take place; the 2nd case was fracture of the left femur, at its upper third, occasioned by direct violence; the man was at work carting stones by tramway for the new lines, and while endeavouring to prevent a heavy stone from falling from the truck he was engaged in pushing, he fell and the stone came with considerable force on the thigh, fracturing the bone at the junction of the upper with the middle third: this man is still in hospital, but promises to make a fair recovery.

16. Of the two deaths recorded, one occurred shortly after the man's arrival from Aden, where he was said to have suffered much from fever, diarrhoea, and cirrhosis of the liver; he was sent here on sick certificate, and died within thirteen days of his arrival—general dropsy supervening or resulting from previous existing disease.

17. The second and only other death occurred in the person of a worn-out old man not enlisted but an artificer of the corps, who, not being entitled to pension, was allowed to die quietly in hospital 38 days after admission.

18. No admission from cholera occurred during the year.

19. Two cases of small-pox were treated, one mild, the other of the severer or confluent type; in the latter case the man appeared to derive much comfort from the application of diluted carbolic acid to the pustules; it lessened irritation and controlled the peculiar fœtor of the disease, rendering attendance on the patient more endurable, and reducing, I think, the risk of contagion to his attendants.

20. There were 12 admissions from dengue; the first case occurred in May and the disease continued prevalent throughout the rains; the treatment adopted consisted of a mild purgative to begin with, followed by diaphoretics in combination with anodynes. I am not sure that the patients would not have done quite as well without other treatment than rest and warmth; in no case did it seem to control the resulting pains or render progression easier; local applications of aconite to the parts most painfully affected, gave only temporary relief. I myself was a victim, and went about crippled for more than three months: time alone seemed to cure the disease.

21. The number of cases of chronic rheumatism treated shows no increase on the preceding year.

22. *Syphilis* shows a decrease of three as compared with 1871, but the two cases which came under treatment had been neglected and concealed; both cases suffered much from rheumatism after the chancre had healed, and it was necessary to send the men away for change of climate.

23. A case of true leprosy remained long in hospital waiting discharge, which was ultimately effected by special Invaliding Committee.

24. Four cases of scurvy came under treatment during the year, being an increase of 3 as compared with 1871, but the cases were slight—a little lime-juice and arrack soon restored the men.

25. A case of mercurial inflammation remained long under treatment, so profuse and long continued was the pyalism: the man had been on leave and under native treatment for syphilis.

26. A case under the head "Digestive System" was admitted for perforation of the palate; both hard and soft palates were entirely destroyed; the appearance of the opening showed it might have existed for years or months; of course the man declared it recent; he was sent before the Invaliding Committee and pensioned.

27. *Guinea-worm* shows an increase of 6 cases over the preceding year.

28. *Vaccination* has been carried on energetically during the year; the total number vaccinated was 110, of which 74 were successful.

29. Four men or 98 per cent. were invalided during the year, one for perforation of palate, before mentioned, two for general debility, and one by special committee for leprosy.

HEAD QUARTERS H. M.'S 15TH REGIMENT N. I.

MALLIGAUM.—In Medical Charge of Surgeon E. P. BURROWS; Strength 351.

General Remarks.—The wing of the regiment now at Malligaum was stationed at Augur in 1871. It joined the head-quarters at Mehidpur in January, marched from thence on the 27th of that month, and reached this station on the 16th February. There was but little sickness on the road down; but several cases of chest affections, due to the exposure incidental to night-marching in the cold weather, occurred, and one of these, a case of pleuro-pneumonia, terminated fatally. The improvement in the condition of the men observed on their joining to have resulted from their year's stay at Augur, continued after their arrival at this station, and the general health of the wing has been reported "good" throughout the year. During the hot season the ratio of admissions from affection of the digestive system to the total sick, was noted to be high, and this seemed attributable to the necessity of the men at that time resorting to the river bed for water, owing to the drying up of some of the line wells, consequent upon the scanty rainfall in 1871. In May these wells were deepened, and a good supply of water obtained in them. In the end of November a detachment of the wing, numbering 60 men, returning from Tanna (where they had suffered severely from ague and dengue fever), was exposed to wet and cold at night at Munmar, there being no tents ready for them on their arrival there by train. The result was the admission into hospital of 18 out of 60, in the fortnight subsequent to their arrival.

Sickness.—The admissions into hospital have been 295: nine cases remained on the 31st December 1871: total 304: showing a percentage of sick to average strength for the year of 86·5.

Fever.—Admissions under the heading of fever, numbering 136, have been for the most part as usual, cases of simple ague, and call for no remark. The fatal case returned under the head of "Splentitis," was that of a man who had suffered much from intermittent fever when at Mehidpur. He was admitted with symptoms of remittent fever whilst on the march in January, enlargement of the liver and spleen rapidly resulted, with great pain and tenderness of the latter organs: the fever assumed a typhoid character, and death occurred 20 days after admission.

Disease of the Digestive System.—Next to fevers, diseases of the digestive system present the highest total in the return for the year, numbering 58, and with the exception of one case of external piles, are classified as under:—

Dysentery.	Diarrhoea.	Colic.	Dyspepsia.	Total.
20	16	15	6	57

None of these diseases were characterized by any special symptoms. The fact of their most frequent occurrence during the time good drinking-water was scarce, has already been noted.

Respiratory System.—From disease of the respiratory system there were 15 admissions, eleven from bronchitis, and four from pleurisy—nine of 15 cases occurred in the cold season. There were two deaths from pneumonia supervening on an attack of pleurisy, the other from capillary bronchitis in an aged man of broken constitution. The difficulty of treating cases of this class satisfactorily in a native hospital, consisting of but one general ward, in which an equable temperature cannot be maintained, is insurmountable. Of other classes of diseases, cases have been comparatively few and of slight nature.

Small-pox.—There has been no case of small-pox or cholera amongst the men or in the lines during the year. Four children were attacked with small-pox in May in the bazar and outlying huts. The cases occurred in two dwellings at a considerable distance from each other. They were removed for treatment to a building set apart for the purpose. The huts in which they occurred were fumigated with sulphur, and the clothes of the children and their attendant relatives burnt. The origin of the disease could not be traced. The disease in all four cases was of the discrete form and they all got well.

Cholera.—Cholera was prevalent in the districts to the westward of camp, during August and September. From the reports received from the civil authorities, the disease as it occurred near the station appears to have confined itself chiefly to villages on the banks of the Girna river. 79 cases were returned from eight villages, varying in distance from two to ten miles from the station. From Saegaum, a village on the river which is two miles distant from camp, to the

south-west, seven cases were reported. The village was almost entirely swept away by the flood down the river, which occurred a fortnight after the subsidence of the epidemic. The disease as it attacked these districts did not appear to be of the most virulent type, the deaths reported being somewhat less than one in four of those attacked by it.

Two men have been invalided—one a Bhistee of seven years' service, rendered useless from chronic rheumatism, the other, a worn-out sepoy who had served 28 years.

The rainfall which was less than 28 inches in 1871, has been above the average in the past year, 33 inches and 22 cents having been registered, the weather generally pleasant and seasonable throughout the year; but little extreme heat was experienced at any time. The months of September and October were unusually cool. The temperature of the month of May taken in the hospital ward averaged 80·6, and in December 60·8.

The two buildings at present in use—one as a separate ward for contagious diseases, the other as a deadhouse—will no longer be available for such purposes, when the barracks to which they are contiguous and of which they form part, are occupied (as it is proposed they shortly shall be) by the other wing of the regiment. The want of such buildings will be an important necessity. The deadhouse especially, as all bodies, of which a *post mortem* examination is considered by the civil authorities to be desirable, are sent to the regimental hospital.

The lines. The lines are in good repair and in excellent sanitary condition.

H. M.'s 6TH REGIMENT N.I.

BELGAUM.—In Medical Charge of Surgeon E. F. WHEATLEY; Strength 631.

The strength of the regiment has been increased by one hundred and sixty-six; it being in the year 1871, 465, and in 1872, 631.

The health of the men continues very good as compared with the year 1871. There have been fewer admissions into hospital, and not so many deaths. In 1871 we had ten deaths: in 1872 only three. Three mild cases of small-pox occurred, brought into camp from a village four miles from Belgaum; two were sepoys, and the other a recruit boy.

The lines are well built and of stone and well ventilated; they are on a natural slope, causing a good drainage; besides the drains made artificially behind the regimental lines, we have cultivated fields, the ground of which is slightly swampy.

The latrines are well built and their situation good. They are regularly inspected and kept clean.

The bazar is good—plenty of vegetables and animal food; the cereals are dear, and the native merchants have a bad habit of selling by measure, instead of by weight.

Water. Plentiful and good.

The heat is not very great. For three or four months of the year, the east wind blows, after which west winds prevail and the rains begin to make their appearance—the rainfall during the year was 49 inches 22 cents.

About 8,000 inhabitants made up of Mahomedans, Jains, Brahmins, and native Christians from Goa and Madras.

H. M.'s 12TH REGIMENT N.I.

BELGAUM.—In Medical Charge of Surgeon R. A. ALLEYNE; Strength 648.

The health of the regiment was on the whole very good. The average strength 648. Admissions into hospital 604, of these two died. The percentage of admissions to average strength 93·2. Of deaths to average strength 0·3.. Average daily number of sick 16, and twenty-nine men were invalided.

The following table (an abbreviation of that forwarded with this report) will show at once the number of cases remaining from the previous year, admissions during the year, and those in hospital on the 1st January 1873:—

Diseases.	From last year.	Admitted.	Remaining on 31st December 1872.	Diseases.	From last year.	Admitted.	Remaining on 31st December 1872.
Malarious Fevers ...	3	98	2	Disease of the Liver ...	...	2	...
Rheumatic Affections ...	3	86	1	Do. Spleen ...	...	3	...
Syphilitic do. ...	4	24	2	Gonorrhœa ...	...	9	...
Scorbutic do. ...	...	1	...	Abscesses ...	...	27	...
Other minor causes of General Disease ...	...	1	...	Ulcers ...	...	42	2
Disease of the Nervous System ...	...	7	...	Skin diseases ...	2	65	2
Disease of the Eye ...	1	28	...	Other minor causes of Local diseases ...	3	32	...
Do. Heart ...	...	1	...	Debility ...	...	10	...
Do. Lungs ...	...	21	2	Injuries, Shoe-bite, &c. ...	3	44	...
Do. } Diarrhœa ...	...	18	...				
Stomach and } Dysentery ...	...	15	...				
Intestines... } Others ...	2	70	1	Total... ..	21	604	12

Deaths... {	Ague ...	...	...	...	...	1	} 2
	Peritonitis...	...	...	...	...	1	
Discharged from Hospital	...	...	...	...	...	611	
Remaining	...	...	...	...	...	12	
Total treated...						625	

There were 101 cases of ague treated; of these one was fatal from congestion of the lungs. All the other cases were very mild, an emetic or purgative followed by quinine, given either by the mouth or hypodermically, quickly cured them.

There were 84 cases of rheumatic disease; three of these were of the acute form, and in one of them, the heart was engaged.

There were 28 cases of syphilitic disease—13 primary and 15 secondary. One of the latter was very bad, the nasal and palate bones were attacked; he returned from his country (to which he had gone on leave) a most miserable object, and had to be invalided. On enquiry into his case, I found out that he had been treated with mercury in the bazar and freely salivated.

There was only one case of scurvy under treatment, so that I may say that the regiment is now quite free from that disease.

There were 21 cases of lung disease, 14 of bronchitis, 5 of asthma, 1 of pneumonia, and 1 of hæmoptysis. In most of the cases of bronchitis stimulating expectorants, stimulants, and soups had to be given. The bowel diseases were, as a rule, mild. There was one case of peritonitis, and that a fatal one; the man had been ailing for some days, but did not come to hospital, and only presented himself when he was attacked with acute pain in the abdomen. He died the day after admission.

The injuries were trifling, by cuts, bruises, shoe-bites, &c.

Vaccination was carried on regularly. Nothing particular to be said about the lines and hospital, except that a stone floor has been put down in the latter, which is a great improvement.

SANITARY REPORT OF THE SENIOR MEDICAL OFFICER ON THE HEALTH OF NATIVE TROOPS GARRISONED AT BELGAUM DURING THE YEAR 1872.

The native troops which have been stationed at Belgaum, during the past year, were the 6th and 12th Regiments N.I., together with the lascars attached to the Ordnance Department, making an aggregate of 1,339.

The following tabular statement exhibits the strength, percentage of sickness, and mortality during the period under review :—

Corps.	Mean strength.	Mean daily average number of sick.	Percentage of sick to strength.	Number of Deaths.					
				Ague.	Congestion of brain.	Diarrhea.	Leprosy.	Peritonitis.	Phthisis pulmonalis.
H. M.'s 6th Regiment N. I. ...	631	13·3	49·7	...	1	1	1	...	...
Do. 12th Regiment N. I. ...	617	13·3	99·0	1	...	...	...	1	...
Do. Staff and Details... ..	91	4·0	80·2	...	...	...	...	...	1
Total... ..	1,339	30·6	228·9	1	1	1	1	1	1

The 6th Regiment, which arrived in Belgaum in December 1871, has occupied the right flank lines which were vacated by the 1st Grenadier Regiment N.I. in the latter part of the same year, by which Regiment they were constructed.

The 6th Regiment N. I. was in a very healthy condition on its arrival, which has continued throughout the year, as shown in the above statement, the daily average number of sick having amounted to 13·3 only.

Two cases of small-pox occurred in this regiment, which were accommodated in a tent pitched in an isolated spot to the south-west of the cantonment, and at a distance from any thoroughfare.

The 12th Regiment N. I. greatly improved in health during the year, and the daily average number of sick (15·1) contrasts favourably with that of the previous year (26·3). This change for the better may be attributed to the good effect of a healthy climate upon men who had been previously stationed at Aden for a period of two years.

The native infantry lines are both of recent construction; they are kept clean and neat, and are situated on sloping ground which affords good natural drainage: but, in consequence of rice crops being allowed to grow close to the limits of camp in that direction and in the immediate vicinity of the lines, they are less healthy than would otherwise be the case.

The hospital accommodation is good, but (as before pointed out) insufficient for the requirements of the two regiments usually stationed in Belgaum. Much inconvenience was experienced on this account during the occupation of the lines by the 1st Grenadier Regiment N. I., when tents were required to supplement the hospital accommodation during several months.

The hospital of the 12th Regiment N. I., has been lately improved by the substitution of stone flags for earth in the flooring of the principal ward.

A ward for contagious diseases, a deadhouse, and proper quarters for the hospital assistants, are greatly required. The two former might be made common to both hospitals.

The latrines are of the usual construction, are well situated, and are kept clean.

The lascar lines have been before described, and no alteration has been carried out in them during the year. The defects, as regards construction and situation, which were before pointed out, still obtain.

The following table shows the quantity of rain registered at the Civil Hospital during the year :—

		January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total	
		I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.
Rainfall	15	1	6	1	28	10	56	13	80	384	793	198	...	13	3	78	44	51				

The rainfall was abundant and seasonable, and has amounted to 44 inches and 51 cents, being $7\frac{1}{2}$ inches less than the estimated average for Belgaum, which is 52.

The table of temperature for the year is omitted, owing to the meteorological records having been sent to Colaba, by the officer in charge of the Observatory attached to the European hospital.

The cantonment committee (of which the senior medical officer is a member) has met once a month during the year, to consider all matters connected with the sanitary condition of the station; more especially as regards the disposal of sewages and sweepings, the lopping of trees, and keeping down redundant vegetation, together with the working of the Contagious Diseases Act and the Lock-Hospital.

During the past year, I believe that Belgaum has maintained its reputation as one of the healthiest stations on this side of India; and the sanitary requirements have been provided for as far as circumstances would admit.

There has been a total absence of epidemic disease, and although during the month of September several cases of cholera occurred in the town of Belgaum and close to the limits of the cantonment, no case was brought to notice amongst the native troops. This may be attributed, in some measure, to an order having been issued at the instigation of the senior medical officer prohibiting the native soldiery from entering the infected localities.

H. M.'s POONA HORSE.

SEROOR.—In Medical Charge of Assistant Surgeon W. R. GORDON, M.B.; Strength 205.

The average strength of the Poona Horse at Seroor during the past year has been 205. The admissions were 194, and 2 remained on the 1st January 1872, making a total of 196 cases treated during the period under report. Of these 192 were discharged to duty, 2 died, and 2 remained on the 31st December 1872, average number of daily sick 6.3. Percentage of treated to strength, 95.6. Deaths to strength, 0.9. Deaths to treated, 1.02.

It must be understood that the admissions are far short of the actual number of patients treated in hospital, as the strength of the syces, regimental followers, and "omedwars" is always equal to that of the regiment.

During the past year, the strength of the detachment at Dhulia was 150, of that at Kaládgi 80, and at Baroda 14. These detachments will be reported on separately by the medical officers in charge. One party from Baroda has arrived at head-quarters on being relieved by the 2nd Cavalry, and will not, I understand, be again supplied from the regiment.

Of the admissions, 71 were for fever, 66 being for ague, and 5 for simple continued fever. The cases of ague were generally of a mild type, and readily yielded to the ordinary treatment by quinine or liquor arsenicalis. Many were, in fact, so mild as to require only the administration of a purgative or emetic, and a little attention to the diet.

Injuries, Local and General, give 41 admissions, of which 36 were contusions, some being simple, and others complicated, with an abrasion of the skin or a small lacerated wound. There was one admission from a burn, one from a fracture of the rib, one from a dislocation of the patella, one from a wound of the lower extremity, in which case the tibia was to some considerable extent denuded of periosteum, and one from a punctured wound of the shoulder. The last is the only case worthy particular notice.

This case was admitted on the 17th January, and was caused on parade during a charge. The man was seen immediately on the ground, and, as the bleeding was profuse, a tourniquet was applied, which being removed on arrival at hospital, the wound again bled freely. The bleeding point could not be reached through the original wound, which was, therefore, enlarged and the artery was found underneath the deltoid muscle. Two ligatures were applied, and the edges of the wound brought into apposition, and dressed with cold water dressing. The sword had entered about the middle of the internal border of the deltoid and passing obliquely outwards and upwards, below and close to the great tuberosity of the humerus, extended to the posterior border of the muscle, a little below its origin from the spine of the scapula. For the next few days the wound continued to discharge freely, and by the 25th the patient had little or no pain over the seat of the injury. The external orifice, which showed a great tendency to heal up, was kept open by the occasional introduction of the probe. The patient went on improving in every way until the 11th February (25 days after the date of the injury), when secondary hæmorrhage occurred. The hospital assistant applied a tourniquet, which was removed on my arrival, but no further hæmorrhage took place, although I carefully explored the wound with a probe, and cleared out some coagulated blood by means of a syringe. For the next few days there was considerable swelling and tenderness around the shoulder, the pulse, varying from 100° to 120°, and occasionally irregular. Leeches and hot emollient fomentations reduced the swelling to some extent. The patient had a troublesome cough, which

was treated by diaphoretics and morphia at bed time. On the 15th of February, there was considerable hæmorrhage, and as this continued after my arrival, I decided upon opening the wound to its whole extent. Having got the hospital assistant to take charge of the axillary artery, I administered chloroform, then introducing a director into the wound, I divided the deltoid muscle right across. The bleeding vessel, not the same as had been previously ligatured, was found close to the humerus, underneath and behind the great tuberosity, and must have been a branch of the posterior circumflex. This was ligatured, the wound well sponged out with carbolic acid lotion, and the edges brought into apposition by sutures and plasters. Cold water dressing was applied, for which a light poultice was afterwards substituted to promote granulation. The patient made a rapid recovery, and was discharged from hospital in May.

Acute rheumatism gives 10 admissions. All the cases were treated by a succession of small blisters near the affected joints, and internally iodide of potassium and bicarbonate of potash was administered, to which treatment the disease rapidly yielded.

The remaining admissions were caused as follows: conjunctivitis 8, diarrhœa 6, dyspepsia 5, chronic rheumatism 4, boil 4, malignant cholera 3, lumbago 3, neuralgia 3, eczema 3, whitlow 3, bronchitis 2, fistula in ano 2 (one patient twice admitted), gleet 2, abscess 2, and debility 2; measles, primary syphilis, general dropsy, paralysis, sciatica, pleurisy, inflammation of the gum, bubo, stricture, scabies, dracunculus, each gave one admission.

There were two deaths, one from cholera in May, the other from diarrhœa on the 31st December. The last was entered under this head as it was the immediate cause of death. The man had been at Baroda on detachment duty for the last two years, and left that on the 25th November to join head quarters. After the first four days' march, he was continuously sick, and arrived at Seroor on the night of the 30th December, completely worn out and exhausted. There was a syphilitic history, and while at Baroda he was treated on several occasions for œdema of the face and lower extremities, dependent, no doubt, on some organic disease; but he was in so weak a state on arrival as to preclude the possibility of a minute examination.

The circumstances most deserving of record in the medical history of the regiment, during the past year, is the outbreak of cholera in the adjoining village, and the comparative immunity of the inhabitants within cantonment limits. Previous to the appearance of cholera the atmospheric changes were obvious. From the 23rd April to the 4th May the temperature ranged from 100° to 102° inside the hospital, and from 110° to 112° in the verandah. This is considered a very high temperature for Seroor. During the first three days of the month, the sky was overcast for the greater part of the day, there being a stagnant, close, hot, and oppressive condition of the atmosphere. On the 4th, 6 cents of rain fell, but the quantity was much greater in the vicinity of Seroor. This reduced the temperature about 3 degrees and rendered the air moist, a condition which is, I believe, favourable to the development of cholera.

From the 1st to the 4th May several cases of diarrhœa were treated in the lines. The first case of cholera was admitted into hospital on the 5th and the last on the 18th May, so that the disease did not break out in the cantonment until two days after its appearance in the adjoining village, where no fewer than 13 cases had been registered from the 2nd to the 5th May, and 10 of these proved fatal. In camp the first death occurred on the 7th and the last on the 23rd May. The population of the cantonment is about 1,000, among which there occurred 11 cases of cholera, of these 3 were enlisted men and 8 followers; of the former, 1 died, and of the latter 5.

It is worthy of remark that none of the women or children in the lines were attacked.

The syces, who are very indifferently fed, clothed, and housed, suffered most. The only enlisted man who died was a very confirmed opium eater. One sweeper was attacked, and a syce, who formed one of a burial party, was seized almost immediately on his return.

The following is the only satisfactory conclusion, which I can arrive at, as to the origin of this outbreak. Several pilgrims passed through Seroor during the latter end of April, and rested for the night in a temporary dhurumsalla. Although I have been unable to trace the direct origin of the epidemic to this source, still, it is only reasonable to infer that these pilgrims had come from an infected district—they imported the germs of the disease into Seroor, and from thence it spread to the lines.

The greater part of the water-supply, for both cantonment and village, is procured from the river Goor, in which there is a continuous flow. The water filters through the sandy bed of the river, and appears to be comparatively free from impurities. I shall forward specimens to Bombay for analysis during next hot season. Two peons are stationed on the bank of the river to prevent the villagers polluting the stream above a certain point. Previous to the outbreak of the epidemic at Seroor, no case of cholera, so far as I can ascertain, had occurred, for at least nine months, in any part of the valley drained by the river Goor, or its tributaries.

In camp the outbreak was not confined to any particular line of houses or locality, but appeared in several parts of the lines. None of the relations or families of those admitted into hospital were afterwards attacked.

Immediately on the appearance of the disease all communication between the lines and village was prevented, and, I believe, it is in a great measure due to the strictness with which Major LaTouche, the Acting Commandant, enforced this order, that so few cases occurred in the lines.

From the 1st to the 18th May, 48 cases of diarrhœa, chiefly among the children and followers, were treated either at their own houses, or in houses set apart for the purpose of an observation ward. Some of these cases were extremely persistent, the purging continued for days. Of the 48 cases, a syce and a child died, and one case afterwards turned into cholera. Stringent orders were issued that any person affected with looseness of the bowels should at once proceed to the hospital for treatment, and I am glad to say this order was strictly obeyed.

The treatment adopted for cholera consisted in the administration of astringents and carminatives, combined with chlorodyne, until collapse set in, after which acid halleri in combination with æther was given. Urgent thirst was relieved by an abundance of cold water, or soda-water. Secretion of urine was promoted by turpentine stupes, dry-cupping, and by the use of chlorate of potash, liquor ammoniæ, acetatis and spirit æther nitrosi; at the same time diluents were given *ad libitum*. In no case did I give calomel in any stage of the disease.

In the village of Seroor, with a population of 4,140, there occurred 112 cases, of these 60 died and 52 recovered. The first case appeared on the 2nd and the last on the 24th May. The first death occurred on the 3rd May and the last on the 23rd of the same month.

It would be superfluous for me to give a topographical sketch of the station, as this was fully detailed by Dr. Simpson in his report for 1870.

The regimental lines are very satisfactory and well adapted for the accommodation of a cavalry regiment. The houses, which may be said to be built on rock, for there is only a thin coating of moorum above, are in excellent repair and afford ample accommodation for the men and their families. The surface drains and the natural slope of the ground, do not admit of the rainfall becoming stagnant in any part of the lines. The rock is all but impervious to water, and little or no percolation through the subsoil can occur, thus preventing the deleterious emanations, which would be otherwise unavoidable, from a subsoil saturated with organic impurities from the horses' urine and litter.

The conservancy is carried out by sweepers entertained by the regiment. Each house has its own private latrine in a corner of the back courtyard, and from this the excreta is removed every morning to a distance of at least half a mile from camp, and it is then used for agricultural purposes. The system is in my opinion a good one, and only wants a little improvement to render it complete. It is very seldom that any offensive odour is perceptible, as great attention is paid to having the latrines thoroughly cleaned out. There is no doubt but that all the solid matter is removed—but what becomes of the liquid discharged? This is the great drawback to the present system, as the liquid excreta must percolate through the upper stratum of the soil and form as it were a cess-pool. I have recommended that all these latrines be built on a standard plan, and that each of them be furnished with a pan or pans, so placed as to intercept both liquid and solid discharges from touching the ground. The contents could then be emptied into a large receptacle or filth cart and removed. The syces have a public latrine for which a sweeper is entertained.

Many of the recommendations previously made have been carried out, the most important being the erection of new lines for the syces, which are now almost completed. The site selected is a convenient one, situated to the north of the camp (or rather to the north of the lines of the men). The houses are substantially built and tiled, and will afford accommodation for 52 families, as several of the syces are unmarried—two of them will have to occupy one house. Each compartment contains 1,000 cubic feet of space.

Another improvement is essentially necessary, but this is not the province of the regiment. I allude to the want of accommodation near the hospital for 2nd class servants. I am sorry to have to bring this matter again to notice, as my predecessor did so year after year during the time he was in charge. The inconvenience experienced from this cause during the late epidemic of cholera, is, I trust, a sufficient excuse. On the 4th June last I addressed the Commanding Officer on the subject, as also upon the urgent need of increased hospital accommodation, and some improvements to the present building. The letter was, I believe, submitted with a recommendation for the favourable consideration of the superior authorities; but I regret to say that the hospital still remains as it was, without a single subsidiary building, except the latrine and a small cookhouse. All the 2nd class servants, including even the sweeper, have to live at a considerable distance. The hospital assistants are provided with houses in the lines, for which they have to pay 8 annas per mensem, as these houses are the property of the men.

The rainfall during the past year has been reasonable, there having been 23 inches 95 cents, as compared with 13 inches 37 cents during 1871.

	Mean Maximum.	Mean Minimum.
	°	°
In Verandah	96	67
In Hospital	88	72

The small difference between the maximum in the verandah and the hospital, is accounted for by the low walls and ceiling, and by the want of verandahs around the building, except on the east side.

Vaccination has been regularly carried on during the year.

On the 28th October the regiment marched on Bombay for duty, during the visit of the Governor General. The whole distance of over 140 miles was accomplished in nine marches without a halt. The duty of the men, while stationed at Parell, was, to say the least of it, very trying; but, nevertheless, the number of sick was comparatively small, and the regiment marched again into Seroor on the 8th December with only one man on the sick list. I may here remark that half the camping ground at Parell was so damp, as to be almost unfit for the men to sleep on.

The dispensary, which was lately started at Seroor, has been of great advantage, and it is moderately well attended. The building is substantial and commodious, the only objection being its distance from the village. For the present, this cannot be avoided, as no other house is available.

H. M.'s 11TH REGIMENT N.I.

SA'TA'RA.—In Medical Charge of Assistant Surgeon R. M. WALL; Strength 385.

On October 22nd I received medical charge of the regiment from Dr. Colston, and found the head-quarter right wing in a good state of health. The left wing of the regiment was divided into two detachments, one being stationed at Asirgarh and the other at Bombay.

The daily average of sick in the hospital of the head-quarter wing was 10·5, and all the cases were of a mild nature.

On November 8th the head-quarter wing left Sâtára *en route* to Poona, and arrived at that station on the 15th instant.

During the march no severe cases occurred, but 21 cases of shoe-bite were treated—the result of badly made and ill-fitting boots. While on field service at Poona, the health of the sepoys was good, notwithstanding the heavy fall of rain. The Asirgarh detachment seemed to suffer more than the head-quarter wing or Bombay detachment. Great care was taken to keep the encamping ground clean, and trenches were dug to keep the rain from the tents. Straw was provided for bedding.

The principal diseases which occurred while in Poona were as follows:—

Bronchitis 4 cases, rheumatism 12 cases, splenitis 2 cases, diarrhœa 5 cases, dysentery 1 case, ague 60 cases. None of these cases were of a serious nature, except one of ague, which occurred in a sepoy of sixteen years' service; and when after severe fever chest complications set in, recourse was had to stimulating treatment, with the best results.

The head-quarter wing left Poona on December 17th, and arrived here on the 23rd instant.

Under instructions received from the Quarter Master General, P. D. A., the marches were changed, and trial was made of new encamping grounds, but the result was unsatisfactory, and a report to that effect has been sent to the Quarter Master General, P. D. A., by the Officer Commanding. Since the arrival of the head-quarter wing in Sâtára, no serious cases have occurred.

There is no regimental hospital, and a bungalow in the officers' lines has been made use of for that purpose. Neither the building nor the situation are suitable. The sanitary arrangements of the station are very defective. Nullas, running close to officers' bungalows, are used by natives as latrines and waste pits, and brushwood grows unmolested along the public roads. The lines are newly erected, well ventilated, and kept very clean.

Vaccination has been regularly carried out.

Five cases of small-pox occurred during the year—3 in February, 1 in March, and one in June; of these none were fatal.

No epidemic occurred, and no case of cholera.

H. M.'s 28TH REGIMENT N. I.

SHOLÁPUR.—In Medical Charge of Assistant Surgeon A. J. LEGGATT; Strength 645.

Sholápur is situated in latitude $17^{\circ}40'$ north and longitude 76° east, about 180 miles from the sea, at an elevation of about 1,600 feet above it.

The surrounding country is undulating and intersected with water-courses, but is perfectly destitute of hills and nearly entirely so of trees.

The nearest running water, with the exception of the Adela or Sheljee nullah, is the Seena river, distant eight miles from camp.

The surrounding country is to a great extent barren, but parts are cultivated, the chief crops being cereals, pulse, oilseed, and cotton.

The ground on which the cantonment is situated is rocky and gravelly, the rock being Trappean; there is a downward slope over all sides from the ground where the lines and camp are built, and the surface water is carried off from it by nullahs into one of the two tanks close at hand. Having in my report of last year given a full description of the camp and surrounding country, it would be useless to report the same; so in the present report I will confine myself to the things that have been prominently brought to notice during the past year. In so doing, I propose speaking, firstly, of the climatic changes, &c.; 2ndly, of the health of the regiment, &c.

1st.—The past year has been one of the most trying that has been felt in this place for a long time. The hot weather came on very early; in fact the cold season may be said to have been over by the end of January.

The temperature reached during April and May was very high, the thermometer at times reading as high as 109° in the shade. In the lines this heat was almost unbearable, as they are situated on the naked rock, and are perfectly devoid of all shelter, consequently, the heat is very much increased by radiation and refraction. I have at times been in the lines during the heat of the day, and have found them to be almost unbearable from the intense heat. I consider it a matter of wonder how the men escape from sunstroke and heat-apoplexy. During the previous year the nights were always cool, but during the hot weather of the year just concluded, they were always still and close, the thermometer often reading as high as 96° or 97° at 10 P.M.

The fall of rain during the past year has been a heavier one than has fallen within the memory of any of the inhabitants now living, the largest fall being in September, as much as 24.65 inches being registered during the month. Consequent on this heavy fall there has, of course, been a large amount of sickness during the latter portion of the year.

In my report last year I gave a detailed account of the lines, hospital, &c., consequently, as there have been no alterations, it would be useless to repeat the same remarks, with the exception of stating that the want of a deadhouse is very much felt.

2nd.—I now pass on to speak of the condition of the regiment. In the month of November it was removed temporarily to Poona, and returned to this station on December 21st. The health of the men was much improved by the march, and none of them were injuriously affected by the same, unless in the case of a man who was seized with acute pneumonia on his return, and died two days subsequently.

The number of admissions into hospital show a very marked increase over those of 1871, being 972 as compared with 680 in 1871. This is mainly due to the large number of admissions from ague, which are 545 as against 346 in 1871; but is also supplemented by an increase of 10 cases of rheumatism, 7 of conjunctivitis, 23 of gonorrhœa and its complications, 15 of dysentery, 24 of diarrhœa, and 12 of colic. This increase may be easily accounted for by the intense heat during the hot weather, the heavy rainfall which the roofs in the lines were unable to resist, and the consequent malarious state of the whole country.

Not many cases were of a serious nature, but proved obstinate and resisted treatment for a long time, as may be deduced from the fact of the average daily number of sick amounting to 33.45, whereas in the preceding year it was only 17.05.

Veneral disease still holds a very prominent position among the numbers admitted, there being no less than 50 admissions from it, independently of 78 cases of rheumatism which were to a greater or less extent caused by this disease.

The mortality has been high, no fewer than 8 men having died. One of them died in the course of 24 hours, one from diarrhœa, another death was accidental from drowning, 5 from fever—some of them complicated with dysentery—one from hepatic disease, and one from pneumonia.

There is a great difficulty in examining bodies, as they should be examined, consequent on the want of a deadhouse; all bodies have to be examined in the verandah of the hospital.

Thirty men were sent up before the Invaliding Committee in Poona, of whom 17 were rejected, and have been obliged to be kept in hospital, nearly the whole period that has elapsed since then.

On the arrival of the regiment in Poona, 2 havildars were sent before a Special Invaliding Committee, one suffering from great debility and the other from a large inguinal hernia on the right side.

Two European officers and seven men have proceeded on sick leave during the year, the latter for periods varying from four to twelve months.

Vaccination has been steadily practised throughout the regiment, not only among infants but a large number of the men have been re-vaccinated.

H. M.'S 13TH REGIMENT N.I.

AHMADNAGAR.—In Medical Charge of Surgeon W. T. D. TICEHURST; Strength 650.

The right wing of the regiment arrived at Ahmadnagar in December 1871. The left wing and head-quarters on the 3rd February 1872. The health of the regiment has much improved since its arrival at this station, as the following table of increase and decrease will show:—

H. M.'s 13th Regiment N. I.				1871.	1872.	Increase.	Decrease.	Remarks.
Strength ...	{ Europeans ...	...	...	64	65	0.1	...	
	{ Natives ...	...	...	632.0	650.1	18.0	...	
Admissions	...	...	...	868	753	...	115	
Daily average number of sick	...	...	...	23.8	18.8	...	5.0	
Treated to strength	...	...	...	14.1	11.7	...	3.6	
Died in hospital	...	...	...	9	3	...	6	
Died out of hospital	...	...	...	...	* 1	* 1	...	* Sudden death
Sent on sick certificate	...	...	...	12	8	...	4	from heart
Invalided	...	...	...	13	15	2	...	disease.

The chief cause of admissions has been from fibracula, of which 228 cases are recorded. Ague 94 cases against 137 of the preceding year. Bronchitis, chronic, 30 cases, dysentery 12 cases, diarrhoea 12, and contusion, chiefly shoe-bites, 80. The fevers generally were of a mild form and easily amenable to treatment. Four cases of remittent fever were entered, of which one proved fatal; this case occurred in a young recruit lately joined, who contracted fever on the road; he died ten days after admission from exhaustion.

Of chronic rheumatism 3 remained from last year, and only 9 were admitted against 34 of the preceeding year.

Of syphilis three cases of primary and eight of secondary syphilis are recorded. Of scurvy only 4 cases were admitted, and one remained from last year, of these two were discharged cured to duty.

Lumbago.—Eighteen cases are recorded, 17 were discharged to duty, and one remained on the 1st January 1873.

Paraplegia.—Under this head one fatal case is recorded. The paralysis was the result of severe concussion of the spinal cord and brain. The deceased was a havildar in the regiment, and had been attacked and beaten and thrown violently down by a sepoy (Punjabee): death occurred on the 10th day. The patient was quite conscious when brought into hospital. The result of a *post mortem* examination was recorded in the remarks in the monthly return for December.

Disease of the Respiratory System.—Thirty-one cases of chronic bronchitis were treated during the year: all discharged to duty.

Disease of the Intestines.—Twelve cases of dysentery were treated, all were of a mild character. Twelve cases of diarrhoea are recorded, and twenty-four cases of colic.

Diseases of the Rectum and Anus.—Seven cases of hæmorrhoids were treated, all discharged to duty. Two cases of prolapsus ani are recorded—both sent to duty.

Diseases of the Urinary Organs.—Eighteen cases of gonorrhœa were admitted, and the same number discharged to duty.

Diseases of the Generative System.—Four cases of orchitis were treated—all discharged to duty.

Disease of the Cellular Tissue.—Under this head four cases of abscesses and two cases of guinea-worm occurred. One of the cases of abscess occurred in a broken-down, debilitated sepoy—a great “Ganja” smoker—a large quantity of matter formed in the *Ischio-rectal fossa*: the man died from exhaustion. A *post mortem* examination recorded extensive disease of the lungs (phthisis).

Diseases of the Cutaneous System.—Under this head two cases of ulcer, thirty-five cases of boil, and two cases of whitlow, were recorded—all discharged to duty.

Injuries of the Upper extremities.—Two cases of sprain were treated.

Injuries of the Lower extremities.—Eighty cases of contusion, chiefly shoe-bites (caused by badly fitting boots) were treated.

No European officer has been sent on sick certificate, nor has any death occurred.

SANITARY REMARKS.

1. No case of cholera has occurred.
2. Six cases of small-pox are recorded.
3. Vaccination has been regularly and successfully performed.
4. The general sanitary condition of the cantonment is very satisfactory. Roads are kept clean, hedges kept cut, and no refuse of any kind allowed to collect.
5. During the latter part of the year the latrines were closed, and the Trench system was commenced, and up to the present time appears to work well.
6. The Hospital 13th Regiment N. I. is quite unsuitable; inside it is dark and dreary, and the ventilation bad. There is no deadhouse. *Post mortem* examinations are obliged to be performed in the verandah. The hospital latrine also requires alterations and improvements. Estimates have, I believe, been sent in, and I hope the necessary alterations and improvements will soon be made.
7. House accommodation is required for two native medical pupils.
8. The rainfall came up to 28 inches 6 cents, being 10 inches more than was registered last year. The mean temperature for the past year was 79·5. The highest temperature was obtained in May and the lowest in December.
9. The water-supply has been sufficient in quantity and of good quality. The water supplied to the regiment is obtained from the Kupperwara aqueduct.

REPORT OF THE GARRISON SURGEON ON THE HEALTH OF THE NATIVE TROOPS STATIONED AT ASIRGARH.

The average strength of the Garrison Staff and Details has been 53·41.

Do. of the Detachment H. M.'s 11th Regiment N. I., 129·50.

Do. do. 10th do. N. L. I., who arrived here on temporary duty from Mhow on the 12th November last, has been 119·50.

The average strength of the “Bengallee” State prisoners was 7. That of the “Punjabee” prisoners of State 3, who arrived here from Allahabad on the 15th December 1872. Cantonment bazar and civil population 2,691.

The detachment 10th Regiment N. L. I. arrived here on the 12th November on temporary duty from Mhow; of these 41 cases were admitted [to hospital, 34 discharged well to duty, and 7 with slight ailments, were remaining at the end of the year.

The detachment 11th Regiment N. I. was present during nearly the whole year; of these one remained from past year, 183 were admitted, 170 discharged well to duty, 10 invalided (4 of them were not admitted to hospital but taken as “unfits” from the ranks); one died from remittent fever and dysentery, and six are remaining on the books, while one was sent to his

native country for change of air. Of the staff and details 23 were admitted, 1 remained, 21 discharged well, 2 died ("one Bright's disease") and another from remittent fever; 1 discharged in column "otherwise" and sent for change of air to his native climate.

The daily average number of sick of Staff was				...	...	...	0-77.
Do.	do.	do.	of detachment	10th Regiment	N.L.I.	...	7-65.
Do.	do.	do.	do.	11th do.	N.I.	...	5-00.

The total number of sick of the bazar and civil population, presenting themselves for treatment in hospital was 214; this number is smaller than usual this year, as the people in the Pettah bazar and civil population were not allowed entrance to the Fort until August, owing to the existence of cholera and small-pox, the latter of which became epidemic in the bazar (40 cases and 3 deaths) and led to the necessity as stated of isolating the cases outside the Pettah in huts, until finally the epidemic was extinguished and had disappeared. The obvious exposure of the Pettah bazar and civil population to sickness and epidemics (it being on and in direct communication with the main trunk road connecting the Deccan with Hindoostan and Central India), points clearly to the necessity of providing without delay as recommended a dispensary and establishment therein, so as to secure the Garrison and Fort from contracting the prevailing diseases and epidemics of this neighbourhood, unhealthy for many months of the year.

The diseases among the troops, and staff and details, &c., worth bringing to notice are chiefly ague, 109 cases—some severe and protracted—accompanied with occasional complications of head, chest, spleen, liver, or bowels: all recovered and there were no deaths. The treatment consisted in diaphoretics, salines, aperients, quinine in large doses, arsenic, liberal diet, warm flannel clothing, &c.

Remittent Fever four cases, of which there were 2 deaths. The character of the fevers of this year being of an exceedingly low, adynamic and somewhat typhoid form, with cerebral, bronchial, or abdominal complications, leave but little chance of recovery to native constitutions; one case occurred and proved fatal in a sepoy of the detachment 11th N.I., who wholly recovered from the fever, but died from exhaustion, produced from excessive diarrhoea and dysentery which it was found could not be checked even with the greatest care and attention. Another sepoy of the same corps had, however, a similar attack, with severe bronchial affections, lasting for about a month, and ultimately recovered.

The 3rd case was that of a muleteer of the Garrison Commissariat, whose case was attended with extreme prostration, low, adynamic and urgent bronchial affection, and, ultimately, a wasting diarrhoea, to which he succumbed after an illness of four days. The medical officer in attendance states, this man only came too late to hospital and when his case was hopeless.

The 4th was that of a European, a Private of the 83rd Regiment, who was left here, being unable to proceed with his detachment on duty to Poona. This man was laid up with low, adynamic fever; had daily remissions and exacerbations, lasting for over 50 days, with intense articular and muscular neuralgia, but without further complications to any great extent of the internal organs, with the exception of the head, which for sometime (about 10 days) was more or less affected, and the patient wandering and delirious. The prostration in this case was extreme and protracted, accompanied for nearly 6 weeks with dark brown fur and fissured tongue, dental sordes, and sacral bed sores, and some few abdominal petechiæ. Yet the patient slowly improved to convalescence, and was given over finally to the officer in charge of his detachment for further disposal, change of air, &c. The treatment adopted in all cases was much like that for ague.

Chronic Rheumatism in all 33 cases, most of them in old men who, owing to the change of weather in July, August, and September, &c., were forced into hospital. Of these 27 were discharged well to duty, 2 remaining at end of the year, and the remainder 4 being worn out in the service, were unfit and invalided. The case of synovial rheumatism was long and tedious, lasting from 6th September to 10th December, but was returned well to duty. The treatment consisted generally in alkalies with iodide of potassium, infusion chyretta, counter-irritation blisters, warm flannel clothing, good diet, &c.

Bronchitis Chronic and Bronchial Catarrh.—Of these there were 8 cases: all recovered with the exception of one of old standing, and this had to be invalided, the man being worn out and unfit for further service. Treatment consisted in alteratives, aperients, tonic, expectorants and counter-irritation to chest, warm flannel clothing, good diet, quiet and rest, with freedom from drill and duty for some time.

Pneumonial phthisis, this case was at first admitted once or twice with bronchitis chronic; then with the above disease, on which account he became finally so debilitated and unfit for further service, that he was invalided.

Dysentery.—Of these there were 8 cases in the detachment 11th Regiment N.I., one case in the detachment 10th Regiment N.L.I., and one in the Staff, making 8 cases. Most of them were sharp attacks but soon recovered. One man was admitted three times for this complaint, and being old and worn out and "unfit" for further service, was finally invalided.

Diarrhœa but few cases, all slight and quickly recovered.

Gonorrhœa—one of old standing, contracted elsewhere—soon got well.

Splenitis—one case in 10th N.L.I., slight and recovered in a few days.

Bright's disease.—The case of an officer who was admitted on 6th June and died 13th idem.

Epididymitis occurred in December 22nd to one of the blistees of detachment 10th N.L.I. The patient was convalescent at the end of the year, though not discharged.

Abscess cases slight among the troops, and one man belonging to the bazar on whom I operated for a bad "perineal" abscess, being emaciated and weakly, died ultimately; not it would appear from the abscess so much, as from a coincident complication of the lungs, somewhat of a bronchio-phthisical and senile form.

Debility—one case, 11th N.I., was invalided, being fairly worn out and unfit for active service. Another was that of a European Serjeant, P.W.D., who had suffered previously from *delirium tremens* and ultimately debility, from which he soon recovered after change of air.

Fracture of Scapula in an old woman who fell from a horse—was about one month under treatment and recovered.

Amputation of the right hand and wrist occurred in a woman of the bazar, who it seems was murderously attacked at night (2 P.M.) by a man (now undergoing imprisonment), who severed at a blow the metacarpal bones of the fingers with a chopper, besides inflicting another deep scalp wound on the back of the head with the same weapon, and a similar wound over the left scapular region of her husband who tried to protect her from her assailant. Before reaching hospital much blood was lost, and the operation being performed by me under chloroform, the woman progressed and made a good and complete recovery in about 2 months.

Snakebite.—This was an officer's servant who was bitten in the foot by a snake, supposed to be a "Foorsa." A tight ligature was applied immediately above the wound, the punctures lanced and allowed to bleed freely, and ammonia in small and repeated doses administered internally. Hæmorrhage or rather oozing from the wound and gums continued more or less copiously for several days, which it was found impossible to stop; the limb was extended above the body; astringents, styptics, &c., were used; but the hæmorrhage did not cease. The boy was supported with nourishing broths, soup, milk, eggs, and nourishing diet, and tincture ferri sesquichloridi given internally, when in the course of four or five days the bleeding ceased from both the wound and gums, and the boy made thenceforward a good and speedy recovery, the amount of the blood lost being roughly estimated at about two or three pints or more. The hypodermic syringe was not used, it being thought desirable to withhold it, until deemed more expedient.

The general health of the women, both European and Native, in the Fort has been good, ague being the prevailing ailment.

The health of the Bengallee Rajah and son and State prisoners, has been generally good; their food, clothing, &c., has been well attended to. The same observations apply equally to the Punjaabee prisoners of State, recently (on 15th December 1872) arrived here from Allahabad, and connected with the Kooka disturbances in the North-West. These have been for the greater part well since arrival, though it was with some difficulty they were prevailed on to discontinue the pernicious habits of eating opium, and the use of "bang," and charrus and ganja, without which narcotics they seemed to think existence was impracticable. This delusion, however, was soon got rid of, as I have prohibited altogether the use of any of the above, and they have, consequently, benefited in health by the restriction; their food and clothing are plentiful and equally suitable, both of which they can have as much of as they may reasonably stand in need. These prisoners are placed in cells barred, and guarded day and night by loaded sentries placed over them. They are allowed to take exercise during the day, accompanied by a guard, and by night are locked up and placed under strict surveillance. Their quarters are small, inadequate, and unsuitable, and it would be desirable could better be procured for them, especially as they appear to be confined in this fortress for life.

The general health and sanitary condition of the garrison staff and details, their quarters, &c., have been as satisfactory as can be expected, under the circumstances, and there have been no specially developed sources of disease to account for beyond the forty cases of small-pox and one sporadic case of cholera, all of which occurred in the Pettah bazar at the foot of the hill.

Were, however, a dispensary with an assistant (as long since recommended) established in this place (the Pettah), these complaints would have been checked or stamped out earlier and more efficiently; and it was fortunate none this year appeared among the troops, &c., in the Fort on the top of the hill, owing to quarantine established with police patrols, &c.

State of hospital buildings as last year continues unsuitable, and its sanitary deficiencies considerable. Originally a pendal, it has no verandahs and but little accommodation, and is utterly insufficient to meet the requirements of the place, which are those of garrison staff and details and general hospital in which the sick of all classes, ages, and sexes, are alike treated. A tent or some adjacent pendals have to be indented for annually to supply the required accommodation, not only for the military section of the community, but also for four or fivefold that number of police, native officials, workpeople, &c., employed on Government and other works, who come under constant treatment, and for whom no provision has as yet been made. The present staff hospital has neither cook, bath, ablution, or wash houses of any kind, and the sick in severe cold or trying weather, lasting for four or five months in the year, have not frequently to do without their meals or means of ablution, there being no places set apart for such requirements. The latrines are temporary but kept in good order, and Dry-earth system daily carried out.

There are no hospital assistants or medical pupils' quarters, and for the time they have to share with the servants the same dark insanitary hovels. It is, I may add, most inconvenient for such deficiencies to exist so long, though annually represented. Plans and estimates for these and other improvements have been long duly gone into, and sent in by undersigned and the local engineer; but nothing appears to be done, and the want is, therefore, again this year brought forward in this report, in the hope that something may be done through the divisional sanitary authorities, with regard to what has been for the last six or seven years officially recommended by the committees on barrack and other buildings, yearly assembled at this station.

The fall of rain, over 41 inches and 48 cents, has been beyond the annual average, which is about 32 inches.

The tanks, however, appear not to profit by this abundant fall, as on the water reaching a certain height, they leak. They require inspection during the dry weather when the water is at a low level; and a few broken surfaces where plaster has fallen off should be carefully cemented and set to rights, by which means a considerable saving of water would be effected, which now finds its way through the retaining walls.

The water-supply sources and quality—tanks, and one shallow well for Europeans, to supply the whole station.

The quality and quantity were deficient this year, particularly in the hot weather, and the troops had to get their drinking-water from a well "chicken bayra" at the foot of the hill, the quality of which after analysis was found to be by no means good. I may add that the only shallow well in the Fort used for Europeans is utterly insufficient.

Prevailing Diseases of troops and of the civil population.

Chiefly ague and remittent fever. Some of the latter this year was of a bad and low, adynamic type, with usually complications of head, chest, spleen, or bowels, but for the most part amenable to treatment.

*Admissions and Deaths of Garrison Staff and Troops, and Cantonment Bazar
and Civil People, &c., are shown below.*

No.	Diseases.	Garrison Staff and Details.		Detachment 10th Regiment N.L.I.		Detachment 11th Regiment N.I.		Cantonment Pettah Bazar.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
11	Simple continued fever ... ..	...	...	...	...	1	...	...	...
12	Febricula ... ..	...	...	...	...	2	...	...	...
15	Ague	13	...	27	...	69	...	143	...
16	Remittent fever	2	1	...	...	2	1	1	...
17	Simple cholera	1	...	...	...	...	...	...	...
21	Mumps ... ..	...	...	...	...	...	...	1	...
38	Chronic rheumatism	1	...	2	...	30	...	8	...
59	Synovial rheumatism ... ..	...	...	...	...	1	...	...	...
84	Paralysis ... ..	...	...	...	...	...	...	1	...
101	Neuralgia ... ..	...	...	...	...	1	...	...	...
111	Conjunctivitis ... ..	...	...	...	...	5	...	3	...
190	Inflammation of the (external meatus) ... ..	...	...	...	...	4	...	...	...
305	Bronchial catarrh	1	...	...	...	1	...	...	...
306	Bronchitis ... ..	...	...	...	...	6	...	7	...
315	Pneumonial phthisis ... ..	...	...	...	...	1	...	...	...
419	Sorethroat ... ..	...	...	...	...	1	...	...	...
460	Dyspepsia ... ..	...	...	...	...	...	...	2	...
466	Dysentery	1	...	1	...	6	...	2	...
484	Diarrhœa ... ..	...	...	...	...	1	...	8	...
585	Gonorrhœa ... ..	...	...	...	...	1	...	3	...
486	Colic ... ..	...	...	1	...	3	...	5	...
491	Hæmorrhoids... ..	...	...	...	...	...	...	1	...
524	Splenitis ... ..	...	...	1	...	...	...	1	...
538	Bright's disease	1	1	...	...	...	...	...	...
589	Bubo ... ..	...	...	...	...	...	...	3	...
591	Epididymitis ... ..	...	...	1	...	...	...	...	...
819	Abscess ... ..	...	...	2	...	1	...	1	1
838	Psoriasis ... ..	...	...	1	...	...	...	...	...
839	Ulcers... ..	...	...	...	...	3	...	4	...
861	Boils ... ..	...	...	...	...	6	...	...	...
864	Scabies ... ..	...	...	...	...	4	...	5	...
841	Herpes ... ..	...	...	...	...	1	...	...	...
900	Bees sting ... ..	...	...	...	...	1	...	...	...
905	Debility	2	...	...	...	1	...	2	...
985	Snakebites ... ..	...	...	...	...	...	...	1	...
992	Burn and Scald ... ..	...	...	...	...	1	...	...	...
1,115	Contusion	1	...	5	...	29	...	3	...
1,116	Sprain of the Wrist ... ..	...	...	...	...	1	...	...	...
	Toothache ... ..	...	...	...	...	...	...	1	...
	Cephalalgia ... ..	...	...	...	...	...	...	1	...
	Miscarriage ... ..	...	...	...	...	...	...	1	...
	Fracture of the scapula ... ..	...	...	...	...	...	...	1	...
	Amputation of the right wrist joint... ..	...	...	...	...	...	...	1	...
	Wound of the upper extremities ... ..	...	...	...	...	...	...	1	...
	Worms ... ..	...	...	...	...	...	...	3	...
	Total... ..	23	2	41	...	183	1	214	1

N.B.—The above sickness of cantonment bazar people refers only to a period of about 4 months; for the remainder of the year, the bazar and civil population were placed in quarantine and not allowed into the Fort, and, consequently, could not avail themselves of hospital treatment; and the 40 cases of small-pox, not mentioned in this return, had, therefore, to be treated (as already stated) in isolated huts, erected for that purpose, at the foot of the hill.

GARRISON STAFF AND DETAILS HOSPITAL.

METEOROLOGICAL OBSERVATIONS from 1st January to 31st December 1872.

Asingurh, 1st January 1873.

MONTHS.	TEMPERATURE.						RAIN.			WIND.		REMARKS.	
	Highest in Month.	Lowest in Month.	Range in Month.	Mean of all Highest.	Mean of all Lowest.	Mean Daily Range.	Approximate mean for Month.	Number of Days it fell.	Amount collected.		General Directions.		Estimated Strength.
									Inches.	Cents.			
January	83	55	28	75.45	63.64	11.81	69.54	...	...	...	N.E.&N.	
February	88	61	27	80.65	68.06	12.59	74.35	...	...	...	N.E.&N.W.	
March	98	69	29	92.58	77.93	14.65	85.25	...	...	...	N.W.	
April ...	100	70	30	101.43	80.30	18.13	90.86	3	1	8	W.&N.		
May ...	103	87	16	98.67	83.87	14.80	91.27	...	...	...	W.W.	
June ...	106	73	33	91.83	81.06	10.77	86.44	9	3	58	S.W.		
July ...	83	68	15	77.58	72.32	5.26	74.95	23	16	99	S.W.		
August	79	70	9	76.83	71.25	5.58	74.04	23	8	34	S.W.		
September	84	69	15	78.56	72.55	6.01	75.55	15	9	58	S.W.&W.		
October	84	67	17	80.64	71.93	8.71	76.28	2	...	73	W.		
November	84	60	24	78.50	69.76	8.74	74.13	...	...	...	N.N.W.	
December	82	63	19	77.00	66.19	10.81	71.59	...	1	18	N.N.E.		
Mean...	89	67	21	83.89	73.23	73.61	78.68	87	41	48	...		

H. M.'S 7TH REGIMENT N. I.

DHARWAR.—In Medical Charge of Assistant Surgeon R. H. BATTY; Strength 639.

From the 1st to the 17th December 1872 the average strength of the regiment had been 639. On the morning of the 17th December the regiment was broken up into two wings, and on that day the head-quarters and left wing marched from Dharwar to this station. From the latter date to the 31st December, the average strength has been 335. There were five hundred and thirty-three admissions into hospital, from 1st January to the 17th December 1872, and thirty-one from 17th to 31st December 1872. Thirty-eight cases remained on the 1st January 1872, making the total treated up to the 17th December five-hundred and seventy-one, and from that date (when I gave over charge of the right wing) to the 31st December 1872, thirty-one. The percentage of treated to strength from 1st January to 17th December was 89·3, from 17th to 31st December 1872, 9·2. Of deaths to treated 0·52. The daily average sick from 1st January to 17th December 1872 has been 23·3, and from the latter date to the 31st December 1872, 15. Three deaths have occurred: one from erysipelas of the face and head, laryngitis, and œdema of the glottis. The subject, a havildar and a 1st class school-master, was admitted into hospital on the 26th August, with diffused erysipalatus inflammation of the head, face, mouth, tongue, and pharynx, extending into the larynx. On admission the head and face were intensely swollen, the lips, gums, and tongue were in a sloughing state, and very œdematous; he was unable to swallow or speak, and in a very exhausted condition; his breathing was most difficult and apparently very painful. He died at 2 A.M., on the morning of the 28th August with all the symptoms of acute laryngitis and œdema of the glottis. On enquiry I was informed that for several days before coming into hospital, he had been suffering from a gumboil, and had applied to it the juice from the common milk bush (*euphorbia neriifolia*), and soon after its application the symptoms for which he sought admission into hospital set up. One from ascites, an old sepoy who had suffered from scurvy and beriberi, while serving at Aden. He was tapped from time to time, when large quantities of fluid were drawn off, but at last he died from extreme exhaustion. The other death occurred from congestion of the lungs, rapidly setting in, in a case of low intermittent fever.

State of the lines and subsidiary buildings. The lines at Dharwar up to my departure were in the same condition as when I last reported. The new lines had not been commenced.

The ground around and about the lines was kept clean. The temporary latrines were always well looked after, and the Dry-earth conservancy, which was most carefully carried out, worked well.

General sanitary condition. The hospital itself is an excellent one, there is ample accommodation in it for the sick of one native regiment. The ventilation is also excellent, since three large ridge ventilators have been erected. There was no deadhouse, and no quarters for the hospital servants, at the time of my leaving Dharwar; though I pointed out, on many previous occasions to the authorities, the urgent want of these buildings, they have not yet been supplied.

Hospital buildings. The rainfall up to the 17th December has been twenty-eight inches and sixty cents.

Rainfall and temperature.

Temperature.

Minimum	...	...	...	...	...	70·01
Mean	...	...	...	...	...	83·30
Maximum	...	...	...	...	...	86·12

The water-supply of the regiment, mainly from tanks, ran short during the month of May and commencement of June. At one time the commanding officer thought he should have to remove the regiment out of camp, some two miles, and encamp them in ground adjacent to a large tank, the supply from which is inexhaustible. But under economical management and by preventing the people from the native town from drawing water from the Fort tanks, this had not to be put into execution.

Water-supply. The prevailing diseases have been intermittent fever, acute rheumatism, and guineaworm.

Prevailing diseases. *Intermittent fever* gave two hundred admissions, the cases were as a rule simple and uncomplicated.

Contusions gave the next largest number of admissions, namely, seventy-six; they were chiefly shoebites and bruises.

Acute Rheumatism gave forty-three.

From *Guineaworm* there were only seventy-four admissions, which shows a considerable falling off in the admissions from this disease when compared with those of the two former years 1870, 115, and 1871, 75.

The following are the diseases which gave the next largest number of admissions:—

21	from colic.
19	„ diarrhœa.
17	„ bronchitis.
14	„ abscess.
13	„ dysentery.
12	„ chronic rheumatism.
11	„ boils.
10	„ small-pox.
8	„ conjunctivitis.
8	„ scabies.
7	„ dyspepia.

Small-pox made its appearance on the 24th February, and between that date and the 12th July following it gave 10 admissions among the sepoys, and 6 among the regimental followers. The disease in the greater number of the cases was of the discrete form, and in some two or three of the patients there were few pustules, if any, the general eruption not having passed beyond the stage of vesicle which was no doubt due to previous vaccination. The hæmorrhagic form of the disease appeared in one case only. The patient, a regimental follower, was admitted with confluent small-pox in the pustular stage; soon after admission enormous congestion of the neck, face, and head set in, and this was soon followed by extensive effusion of blood into, around, and beneath the pustules, and very considerable hæmorrhage from the mouth and anus took place. The friends of all the patients declared they had been either vaccinated or inoculated, and in all the mild cases the marks of vaccination or inoculation were quite visible. Four of the cases were returned in the hospital records as having been successfully vaccinated in the regiment. On the first appearance of the disease, an unserviceable tent was pitched in an open field at some good distance from, and to windward of, the hospital, and into this all the small-pox patients were admitted, the greatest care being taken that no communication took place between this tent, the lines, and hospital; and on the patients becoming convalescent, they were transferred to another tent until all chance of disseminating the disease had disappeared. Disinfectants were freely used. The huts in the regimental lines were all thoroughly searched, cleaned, and white-washed; and after the admission of the case in the pustular stage, which I before mentioned, the greatest care was taken—that immediately on the first symptoms of the disease appearing, the person was at once transferred to the hospital tent. On its first appearance the disease was very prevalent in the Kanara district, and I have no doubt it was conveyed to the regiment by the friends of the sepoys, who were coming to see them and passed through these districts.

Cholera.—There were no cases of cholera.

Vaccination.—Vaccination has been carefully carried on during the year. There were seventy-seven children vaccinated (from arm to arm) all successfully.

Ten men have been sent away on sick certificate, twelve have been invalided, and one discharged from physical inability to perform his military duties. Eleven recruits joined during the past year.

H. M.'S 14TH REGIMENT N.I.

KOLHAPUR.—In Medical Charge of Assistant Surgeon D. HUGHES, M.D.; Strength 591.

With the exception of seven weeks, the regimental head-quarters have been stationed at Kolhápuri; but during the hot weather months, wood-cutting parties were sent to the Komra jungles, to procure wood for repairing the lines.

On the 1st November the regiment marched on to Poona, for the purpose of taking part in the review before the Viceroy, and in the mimic campaign at Harrupsair. A small detachment of elderly men, to furnish the necessary guards for the lines, &c., and such sick men as were not likely soon to get well, were left behind at Kolhápuri. The regiment entered Poona on the 18th November, and was encamped for nearly three weeks in the vicinity of a nullah behind the Ghorpuri Lines. The camp had to be pitched among babool trees which grew luxuriantly in the black soil, and there were sundry monuments in the immediate neighbourhood of our tents, which showed that the spot at one time had been used as a place of interment. After a shower of rain the exhalations from the ground were most unpleasant; but the

evil odours did not swell the sick list. On the 6th December the regiment marched from Poona, and, after leaving two complete companies at Sátára, reached Kolhápúr on the 19th of the same month.

On the march and during the manœuvres, the men were very healthy, though their tents were often drenched, and the ground on which they slept sodden with rain. The weeding out of the old and sickly men, and the hard regular work of the remainder, were, perhaps, the causes of the good health of the regiment, under rather trying circumstances.

Ague.—The number of admissions for ague this year is less than it was in 1871. As bearing on the sanitariness of this station, it is worthy to note, that 16 of the 21 cases which were admitted in May, occurred in men who had just returned from wood-cutting in the Komra jungles; and that out of the 35 ague patients, admitted in September, only 6 were natives of the Bombay Presidency proper. The number of admissions were smallest, 8, in February and greatest, 35, in September. At the beginning of the latter month, there was a long “break”, and the weather was hot and muggy, as it usually is after the monsoon, and, consequently, ague was very prevalent. Towards the latter end of the month rain fell, and though the number of admissions became less, it is a curious fact that *every ague* patient in hospital had an attack of bronchitis, of greater or less severity. Those patients who were suffering from other diseases were not thus effected by the change of weather. The treatment was quinine or liquor arsenicalis, given in doses proportionate to the gravity of the disease. The medicine is now invariably given by the mouth—subcutaneous injection having been abandoned.

Remittent fever.—Fourteen cases of remittent fever were treated during the year. One terminated fatally, being complicated with bronchitis and leucocythemia, depending on enlarged spleen.

Venereal diseases.—The use of lock hospitals is well illustrated by the following figures. During the year 1871 the regiment was stationed in Mhow, where there is or was a well-managed lock hospital. The admissions on account of diseases due to impure intercourse were as follows:—

Gonorrhœa	...	...	...	...	1
Epididymitis	...	...	...	...	3
Syphilis primary	...	...	...	...	3
Indurated bubo	...	...	...	...	1
Syphilis secondary	...	...	...	...	12
				—	
Total...	...	...	...	...	20

In Kolhápúr there are no arrangements for the examination of prostitutes, and the seclusion of those found diseased: here are the results of want of supervision:—

Gonorrhœa	...	...	...	...	19
Epididymitis	...	...	...	...	3
Syphilis primary	...	...	...	...	6
Syphilis secondary	...	...	...	...	18
				—	
Total...	...	...	...	...	46

Five cases of gonorrhœal rheumatism were admitted, but as they were first admitted as gonorrhœa, they are not included in the comparative list.

Treatment of Gonorrhœa.—At the beginning of the year I was so disheartened by the regular occurrence of gonorrhœal rheumatism, as a sequela to the disease when treated in the old-fashioned way, that I anxiously searched for a new plan. That originated, if I mistake not, by Dr. Campbell of the “Dreadnought” seemed safe, and judging from the published cases efficacious. It was adopted accordingly, and every case of gonorrhœa was injected with a solution of permanganate of potass (5 grains to the ounce of water) three times a day. When there was much scalding the acidity of the urine was counteracted by small doses of liquor potass, nitre, and sweet spirit of nitre. Fourteen patients were treated in this way, and not one suffered from gonorrhœal rheumatism, while the five who were treated in the old way all suffered from it severely. In the treatment of gonorrhœal rheumatism, anti-rheumatic medicines are of little use; a liberal diet with stimulants and tonics is more beneficial than colchicum and potass. Attention should always be paid to the gleet which almost invariably co-exists with the rheumatism, and, I believe, in some way causes it.

Dysentery.—Fourteen cases of this disease were admitted last year: all of a mild type, and yielded readily to the ipecacuanha treatment.

Diarrhœa.—Eleven slight cases of diarrhœa were treated: all were traceable to cold or to errors in diet.

Filaria Medinensis.—Seven cases of guinea-worm have been admitted during the year, but if it be true that the filaria medinensis takes nearly a year to reach maturity and make itself felt, the water of Kolhápúr cannot be blamed for its occurrence, as the last case was admitted in September. Most of the worms were single, but one unfortunate man had four extracted—two from each leg.

Deaths.—In September, an Afreedi, aged 21, died of remittent fever, complicated with bronchitis and enlarged spleen. Previous to his fatal illness, the poor man had suffered frequently and severely from ague. In October a Goojur, aged 20, died of pneumonia, after five days' illness. These were the only two deaths that occurred in hospital. The most interesting death out of hospital was that of a bheestie who died suddenly in his house. On the court of inquest it was ascertained that he went to bed in his usual health about 9 P.M., awoke about midnight, and complained of nausea; in a short time dyspnoea with tearing pain in the præcordium supervened, and death ensued. On *post mortem* examination, the pericordium was found distended with blood which had issued from a rupture in the wall of the right venticle.

Eighteen men proceeded on sick certificate during the year. Only 3 were natives of the Bombay Presidency, the remaining 15 were Hindoostanees, 6 Afreedies, 2 Punjabees, 4 Dogras, and 1 Rajpoot.

These foreigners after a severe illness, will not get well without leave to their native country; when weak from illness, home sickness causes them to pine and lower their vital powers as well as their spirits.

SANITARY REPORT BY THE MEDICAL OFFICER IN CHARGE.

The lines are built on rock, thinly overlaid by red soil, with a good natural drainage fall on all sides. The houses have been repaired during the year, and are now in good condition.

Water is got from 12 wells. It is clear, sparkling, and free from smell. No diseases attributable to the use of bad drinking-water have occurred.

The hospital is a well-constructed stone building, raised on a stone plinth. It is situated on the Belgaum road. The ventilation is on the whole good, but during the prevalence of the east winds the building is draughty, which renders the treatment of bronchitic and rheumatic cases in it difficult. The latrine accommodation is ample.

The latrines (like those of the hospital on the Dry system) are good, sufficient, and well looked after.

The lines and bazar are always kept clean.

H. M.'S DETACHMENT POONA HORSE.

KALA'DGI.—In Medical Charge of Assistant Surgeon J. R. LOWRY, M.D.; Strength 77.

During the year 1872 there was an increase of 63 cases treated over that of the previous year. There were 68 cases of intermittent fever treated during the year, being an increase of 21 on the year before. Acute rheumatism also furnished an increase of 8 cases. Chronic rheumatism 4, diarrhoea 10, colic 8 more than the year 1871. The chief number of intermittent fever cases occurred in the first seven months of the year, June and July showing the largest number of cases, viz., 12, 10 and 14. The cases of acute rheumatism occurred during the latter half of the year, but those of chronic rheumatism in the former half. The cases of diarrhoea and colic occurred generally throughout the 12 months. The only important disease that shows a decrease, compared with the year 1871, is dysentery—two cases less occurring last year. The above large increase of diseases treated over the previous years, is somewhat lessened, when I state that the annual report of 1871 was commenced from the 6th of February 1871, the date the Detachment Poona Horse arrived here; so that 1872 has one month and six days during which cases were treated, while 1871 had not. The other cause for the increased sickness, especially fever, rheumatism, and diarrhoea, was, I think, due a good deal to the cold winds which prevailed during the month of May, June, and July, and also to the increased quantity of rain which fell last year. These are the only reasons I can give, as the lines seem as healthy, and the water used is the same as last year, with the exception of one, and that is the lazy and inert life the men of the detachment seem to lead. And as a continuance of inactivity increases always the sick list among men, I think that shows nearly the chief reason why the men of the detachment present a far greater sick list than in the year 1871, when they were fresh from head-quarters. There is no European officer with the detachment.

No deaths occurred during the year. Five men were invalided from a period of one to four months, chiefly for debility after fever.

REPORT BY THE DEPUTY INSPECTOR GENERAL OF HOSPITALS,
POONA DIVISION AND BELGAUM DISTRICT.

In consequence of His Excellency the Viceroy's arrival at Bombay, in the month of November last, and his subsequent visit to Poona, the following corps were ordered to assemble and encamp themselves at Poona, to await His Excellency's arrival :—

4th Rifles from Baroda.	
11th Regiment N. I. Sátára.	
14th Do.	Kolhápur.
28th Do.	Sholápur.

2. The troops commenced to march on Poona early in November, and by the 18th of the month all had arrived and taken up ground, previously prepared by the Quarter Master General's Department. They remained encamped until the 31st December, taking part in the various manœuvres which took place at Harupsir, under the command of His Excellency the Commander-in-Chief, and then marched to their respective stations.

3. During the whole period the troops were under canvas, they were efficient, and had but few men on the sick list, in spite of the rain and the unfavourable state of the ground on which some of the corps were unavoidably encamped, both at Poona and on the line of march.

4. Four new regiments arrived in the division during the year. The 8th Regiment arrived at Poona in February last, in relief of the 9th Regiment, 13th from Surat relieved the 16th at Ahmadnagar, and the head-quarter 15th in February arrived at Malligam and took up the lines of the right wing 10th Regiment under orders to march on to Mhow.

5. These changes were effected without casualties of any kind, and to some corps with much benefit.

6. The following native troops were employed in the Poona Division and Belgaum Districts during the year :—

1st Regiment Grenadier N. I.	...	...	...	...	670
2nd " " N. I.	...	...	...	...	650
6th " " N. I.	...	...	...	...	631
7th " " " " " " " "	...	...	...	...	703
8th " " " " " " " "	...	...	...	...	660
11th " " " " " " " "	...	...	...	...	390
12th " " " " " " " "	...	...	...	...	648
13th " " " " " " " "	...	...	...	...	655
14th " " " " " " " "	...	...	...	...	591
15th " " " " " " " "	...	...	...	...	351
17th " " " " " " " "	...	...	...	...	613
28th " " " " " " " "	...	...	...	...	645

Head Quarters 4 Companies.

Sappers and Miners	...	...	...	...	415
1st Regiment Light Cavalry	...	...	...	...	450
Head Quarters Poona Horse	...	...	...	...	205
Dhulia Detachment Poona Horse	...	...	...	...	150
Kaládgi " "	...	...	...	...	77
Store Lascars	...	...	...	...	53

The above regiments composed a force of 7,331 fighting men.

Sickness and Mortality of Troops.	7. At the close of the year 1871, there remained in the military hospitals of this division...	...	...	...	374
	Admitted during the year	...	...	...	10,845
	Discharged	...	...	...	10,885
	Died in hospital	...	...	...	57
	Remained under treatment on the 31st December	...	...	...	277

Notwithstanding the prevalence of epidemic cholera, small-pox, and dengue, during the past year, the sickness and mortality among the native troops has been less than in the year 1871.

8. Fever, including dengue, has contributed in an unusual degree to swell the number of admissions to hospital. Of the whole sick treated, no less than 5,556 or 49 per cent. were cases of eruptive and malarious fevers.

9. This disease was prevalent among the European troops treated in the Ghorpuri and Wanowri Barracks, for some months prior to its outbreak in the native lines at Poona. It was not until the monsoon had fairly set in that admissions to hospital became numerous. In the months of July and August no fewer than 520 cases were treated in the hospital of the 1st Grenadiers, and the daily average number of sick, from that cause alone, was 78·4. The total number of cases from all charges was 997, and confined entirely to the troops composing the Poona and Kirkee Brigades. All medical officers who have had an opportunity of treating this troublesome and painful complaint, concur in stating that among natives the rash was observed but in comparatively a few cases.

10. A concise description of the symptoms, progress, and treatment of dengue fever is submitted by the Staff Surgeon in his annual report. This officer seems to be of opinion that heat is necessary to its diffusion, and that the poison is widely disseminated. This may be so among Europeans, but, as before stated, the epidemic hardly attacked the native troops and population until the rains had fallen, and the atmosphere had become cool, pleasant, and only reached its intensity in July and August.

The following table will show the number of cases of dengue admitted to hospital and discharged during the year, and how entirely the epidemic was confined to troops in the Poona Brigade:—

Corps.	Strength.	Admitted.	Discharged.	Died.	Percentage treated to strength.
1st Regiment Light Cavalry...	450	3	3	...	0·6
1st Regiment Grenadiers N. I. ...	670	520	520	...	77·6
2nd Do. do. ...	650	237	237	...	36·4
8th Do. N. I. ...	660	224	224	...	33·9
Sappers and Miners ...	415	12	12	...	2·9
Store Lascars...	53	1	1	...	1·8

Fever of a malarious character always gives a large percentage of sick treated. The number of men, however, who passed through the hospital, during the past year, from this cause is not so great as in the preceding one. The returns for 1871 showed that 5,065 cases were treated, with 10 deaths; whereas in the past 12 months, only 4,043 with a somewhat higher mortality of 12 or 2·9 per thousand.

The regiments which suffered most from this disease were the 8th and 28th, stationed, respectively, at Poona and Sholápur. In the former, 752 cases of intermittent fever were treated in hospital, and in the latter, 552 and 3 deaths.

The left wing of the 8th Regiment arrived at Poona from Ahmadabad in November 1871; and it was joined by the right wing in the month of March following. It had been four years in Guzerat, and the health of the men generally had much deteriorated by their long residence in a proverbially malarious province. This circumstance alone, is sufficient to account for the sickly state of the regiment on its arrival at Poona from Ahmadabad—a change which, I am afraid, had done little or nothing towards invigorating the men and enabling them to shake off the fever from which many have been long suffering.

That some climates do act potentially in this way, is clearly exemplified in the case of the 6th Regiment N.I. This corps which served in Guzerat for the same period, and at the same station, and the daily average number of sick was about equal to the 8th Regiment N.I., received orders, on its arrival at Poona, to march on Belgaum, where it arrived in December 1871. Very soon after its arrival, the men began to regain their strength, and were thus enabled to shake off their proclivity to fever which they had so long suffered in Guzerat.

During the past year, the 6th Regiment N. I. show only 110 admissions from intermittent fever, a return more favourable than any other regiment of the same strength in the division.

The 28th Regiment N. I. arrived at Sholápur in January 1871. The men have suffered much from fever for the last 12 months. The admissions to hospital were 552 with 3 deaths. This station is decidedly a malarious one, for the 4th Regiment N.I., during the 3 years it remained there, never had less than 500 cases of intermittent fever in the year; but so inimical has it proved to the health of the European troops, that they are no longer quartered there.

The Artillery were withdrawn in 1871.

The cause of its unhealthiness, I believe, has been ascribed to certain low-lying and wet lands, situated to the south-west of the cantonment; but no decided opinion on the subject has been arrived at.

Cholera in an epidemic form was prevalent in the Poona districts so early as March, but did not reach the city until June. Notwithstanding strict vigilance was exercised by the civil and military authorities, and measures taken to prevent its entrance into camp, a few cases occurred in the lines of the 1st Grenadiers and 8th Regiment, in the months of August and July respectively. There were 4 admissions and 3 deaths. In May the disease broke out in the town of Seroor, and proved fatal to many of its inhabitants. Several cases also took place in the lines of the Poona Horse adjoining the town, but only 3 enlisted men were attacked and recovered. One sowar of the same corps was attacked at Dhulia, with the same result. Altogether 8 cases are recorded with only 2 deaths—a result, considering how wide-spread and fatal the disease has been during the past year, which is very satisfactory.

Small-pox was pretty general throughout the Poona and Belgaum districts, between the months of February and May. In our military hospitals 44 cases were treated. Of these, 2 cases proved fatal, and in men who it is reported had been vaccinated. On the first appearance of epidemic small-pox, grass huts were ordered and erected by the Quarter Master General's Department, and in which all cases were treated. The plan is found to answer admirably; when no longer needed they are by order destroyed. The space in some of the hospital compounds has been found too limited to admit of a hut being erected, when suitable ground is taken up outside and to leeward of the hospital and other buildings.

Vaccination has been steadily carried on by medical officers in charge of military hospitals, and in strict conformity with the regulations. The character of the lymph supplied has been generally reported good, and when otherwise, the circumstance is immediately brought to notice, and steps taken to procure a fresh supply. The returns for December showed but few children in the regimental lines unprotected, and these were reported to be infants too young for vaccination.

The hospital buildings for the reception of the sick of native troops, are in the main well adapted for the purpose. They are as a rule lofty and well ventilated, and afford sufficient accommodation for the daily average number of sick occupying them. Occasionally, on the outbreak of any unusual sickness, inconvenience is experienced for want of spare, when tents are required to supplement the hospital accommodation.

16. But few alterations or additions have been made to the hospital buildings during the year.

17. The regimental hospital at Ahmadnagar, which had frequently been reported on as dark and ill-ventilated, is now undergoing the necessary alteration and enlargement. This, together with the pavement floor laid down in the hospital of the 12th Regiment at Belgaum, are the only improvements carried out.

18. No steps have yet been taken to supply better hospital accommodation at Sátára. The sick of the 11th Regiment are still treated in the bungalow which was rented as a temporary measure in 1870, on the occasion of the former one being washed down.

19. In consequence of the regiment having been withdrawn from Dhulia, its large and handsome hospital will no longer be required. It has, therefore, been suggested, that it might, with a considerable saving to the State, be used as a civil hospital, the present one being but ill-adapted to meet the wants of a large civil population.

20. I am again constrained to bring prominently to notice, the great want which still exists at some regimental hospitals of proper quarters for hospital assistants and medical pupils, wards for contagious diseases, deadhouses, pendals for dooly bearers, and latrines for women belonging to the hospital establishment.

The hospital of the 8th Regiment, though a building of comparatively recent construction, has no separate ward, deadhouse, or latrine for the women.

21. Having now inspected all the regimental lines in the division, I am able to state that, with few exceptions, they are well built, and in a sanitary point of view are satisfactory.

At Poona the 8th Regiment N.I. at present occupy old lines. These have been condemned and preparations are now going on towards the construction of new ones, to be erected on a site selected to the eastern side of the cantonment.

The ground on which they are to be built is in itself unobjectionable, but, I consider, it is too far from the hospital.

22. New and substantial lines for the syces belonging to the Poona Horse at Seroor have just been completed, and from which it is expected they will derive great benefit.

23. It has been strongly recommended to the military authorities that the same measure of good be effected for the syces of the 1st Light Cavalry, for nothing can exceed the squalid wretchedness in which these people live. Last monsoon, cholera struck down a few of them, and considering their filthy habits and the insufficiency of their food and clothing, the wonder is that they were not decimated by that disease.

The lines of the sappers and miners at Kirkee are in a rather dilapidated condition, but new lines, near Holkur Bridge and to the eastward of the camp, are in course of construction, and will, in all probability, be finished by the latter end of the year.

Allusion has been made by the Medical Officer 1st Light Cavalry to the insanitary condition of the village of Ghorpuri, adjoining the cavalry lines, affecting as it does the health of the troops—European and native—located in its neighbourhood.

The military authorities have long been alive to the necessity of something being done to put a stop to the nuisance complained of, and proposed to Government two courses—either entirely to remove the village, or place it under control of the Cantonment Magistrate.

They have adopted the latter course, and placed both the village of Ghorpuri and Wanowri under the Cantonment Magistrate; but, as they will not form a portion of the cantonment or be subject to its laws and regulations, I much doubt if all the good anticipated will be realized.

24. The water supplied to the hospitals and troops for drinking purposes, is, with few exceptions, uniformly good and plentiful. Of course it is found better at some stations than at others; for instance, at Ahmadnagar, where the water is brought by means of an aqueduct from the Kuperwara springs, some miles from the station, and carried into the regimental lines, it has the reputation of being peculiarly clear, sparkling, and free from impurities.

25. Some doubts are expressed regarding the purity of water derived from wells in the Poona Cantonment, especially one situated in the lines of the 8th Regiment N.I., and adjacent to the latrine trenches. Samples of water from this well were directed by authority to be sent to the Chemical Analyser so far back as July last; but, on enquiry, I find, through some mistake, the result has not been made known either to the Medical Officer or to this office.

Fresh samples have now been ordered to be sent, as also from a well much used by the men of the 1st Grenadiers. That the water of these wells contains organic matter there is no doubt, but whether of animal or vegetable product remains to be determined. From the fact of the well in the 8th Regiment lines being in proximity to the trenches, and that of the 1st Grenadiers, on the opposite banks of the nalla, near their latrines, the ground around which is scoured after heavy rain, I am inclined to think that both kinds of organic matter will be found to exist.

26. The Staff Surgeon at Asirgarh brings to notice the scanty surface state of the tank water stored for the use of the garrison in that fortress. This matter is still under the consideration of the divisional authorities, and the suggestion offered to remedy defects, if deemed necessary, will no doubt be carried out.

Although the supply of water is reported by the Medical Officer to be scanty, and its quality positively deleterious, it is satisfactory to know that during the past year the men of the garrison have in no way suffered, and that the general health of the women—both European and Native—has been good.

ANNUAL RETURN of SICK and WOUNDED of NATIVE REGIMENTS in the Poona Division of the Bombay Presidency from 1st January to 31st December 1872.

Poona, 1st January 1873.

		Classes of Diseases. <i>N.B.</i> —The numbers quoted are those of the Nomenclature of Diseases.														
		General Diseases.										Local Diseases.				
		A. Sub-Division.					B. Sub-Division.					Diseases of the nervous system 59 to 104.	Insanity 105 to 110.	Diseases of the eye 111 to 185.	Diseases of the heart 219 to 244 and 250 to 258.	Diseases of the lungs 290 to 337.
		Fevers.			Malignant cholera 18.	Other diseases of this class.	Rheumatic affec- tions 34 to 42.	Syphilitic affec- tions 43.	Scorbutic affec- tions 54.	Dropsies 57.	Other diseases of this class.					
Eruptive 1 to 5.	Continued 6 to 14.	Malarious 15 to 16.														
(d).	Remained sick on 1st January 1872.	1	..	125	...	1	54	20	4	...	1	3	1	13	...	20
(d).	Admitted during the year ...	112	1,302	4,016	8	45	830	179	34	3	25	80	7	335	21	295
	Total... ..	113	1,302	4,141	8	46	884	199	38	3	26	83	8	348	21	315
(d).	Discharged cured during the year.	109	1,299	4,052	5	44	847	181	36	2	22	76	8	342	16	287
(d).	Died in Hospital during the year.	2	1	12	3	2	...	...	1	1	2	4	...	...	3	10
(d).	Remaining on 31st December 1873.	2	2	77	...	...	37	18	1	...	2	3	...	6	2	18
	Total... ..	113	1,302	4,141	8	46	884	199	38	3	26	83	8	348	21	315

		Classes of Diseases. <i>N.B.</i> —The numbers quoted are those of the Nomenclature of Diseases.																
		Local Diseases.										Old age and debility 904 to 905.	Poisons 906 to 991.	Injuries 992 to 1,145 and blistered feet.	Punishment.	Human parasites.	Surgical operations.	Total.
		Diseases of the stomach and intestines 449 to 500.	Diseases of the liver 501 to 520.	Diseases of the spleen 524 to 530.	Gonorrhoea 585 to 594.	Abscess 819 and elsewhere according to site.	Ulcers 859.	Skin diseases 827 to 901.	Other diseases of this class.									
		Diarrhoea.								Dysentery.	Others.							
(d).	Remained sick on 1st January 1872.	5	11	11	2	5	1	10	16	25	10	34	...	1	...	374
(d).	Admitted during the year ...	244	454	458	37	39	140	142	159	616	241	61	17	906	133	5	10,845	
	Total... ..	249	465	469	39	44	141	152	175	641	251	61	17	940	134	5	11,219	
(d).	Discharged cured during the year.	243	450	460	35	42	128	145	169	622	243	59	17	909	133	3	10,885	
(d).	Died in Hospital during the year.	3	1	3	2	1	...	1	...	1	2	2	...	...	...	...	57
(d).	Remaining on 31st December 1872.	3	14	6	2	1	13	6	6	18	6	31	...	1	2	277
	Total... ..	249	465	469	39	44	141	152	175	641	251	61	17	940	134	5	11,219	

FORM No. 35.

ANNUAL RETURN of Admissions and Deaths in Native Regiments in the Poona Division of the Bombay Presidency, classed according to Caste, for the year ending the 31st December 1872.

Poona, 1st January 1873.

					Strength of each Class.	Admissions of each Class.	Deaths of each Class.
Christian...	{ Europeans				106	69	...
	{ Natives				135	118	1
Hindoos	...	...	...	...	6,686	8,322	36
Mussulmans	...	...	...	...	2,362	2,314	20
Jews...	...	...	...	...	118	91	...
Total... ..					9,407	10,914	57

NORTHERN DIVISION.

Average strength present during the year.....	8,054
Average daily sick per cent. to the average strength	5.30
Ratio of mortality per cent. to the average strength	0.84

HEAD QUARTERS H.M.'S 3RD REGIMENT N.L.I.

BOMBAY.—In Medical Charge of Surgeon C. JOHNSON; Strength 609.

1. The average strength of the regiment during 1872 has been 609. The health of the regiment does not compare favourably with the year before; this may be accounted for by the change of station and the very fatiguing march the regiment had from Mhow to Ahmedabad. The number of admissions from all causes amounted to 1,494, being an increase of 778; this increase is accounted for by the fact, that nearly every man in the regiment was under treatment, in hospital, during the epidemic of dengue in Ahmedabad, to which our men were liable, owing to their having only very lately arrived in camp, from their heavy march, when the epidemic broke out. I am happy to say that we escaped with the loss of one man only from this fever.

2. Dengue has been the disease having the greater number of admissions while it lasted. The more constantly prevailing diseases have been intermittent fever, remittent fever, bronchitis, scurvy, rheumatism, dysentery, &c. Many of the cases of fever have been complicated with chest symptoms, dysentery, rheumatism, &c. Very shortly after our arrival from Mhow, the regiment suffered from intermittent fever and bronchitis; immediately following we had dengue, and during the rains, and subsequently intermittent fever, as usual in Guzerat, was very prevalent.

Treated to strength...	...	...	248.7
Deaths to do. ...	...	...	0.8
Deaths to treated ...	...	...	0.3
Average daily sick ...	...	...	27.4

3. The treatment in the fevers has been in the administration of quinine, arsenic, carbolic acid, and subsequently nourishing diet, with iron, strichnia, and other tonics, stimulants, and alteratives. In dysentery, ipecacuanha and opium was found most useful, followed by tonics and strict attention to diet. In bronchitis, rubefacients, leeches, stimulating embrocations, expectorants, diaphoretics, &c., and subsequently tonics.

In dengue, a diaphoretic mixture, during the early stage of the fever, with quinine, iodide of potassium, and carbonate of soda with infusion of creat, seemed to answer very well. And many of the cases were discharged after having been four and five days under treatment. Many had relapses—once or twice recurring—and were much longer under treatment: in every case great attention was paid to the state of the bowels and secretions.

Admissions. 4. The number of admissions during the year was—

Fever...	...	...	...	543
Dengue ...	...	...	...	526
Rheumatism ...	...	...	...	19
Bronchitis ...	...	...	...	81
Conjunctivitis ...	...	...	...	40
Dysentery ...	...	...	...	44
Diarrhoea ...	...	...	...	14
Venereal diseases ...	...	...	...	22
Contusion ...	...	...	...	53
Boil ...	...	...	...	27

5. Dengue fever was the only epidemic occurring during the year, and, while it lasted, nearly crippled the regiment. In the course of three months it entirely disappeared, however, and was fatal in one case only.

6. Five deaths occurred during the year—one from dengue, two from bronchitis, two from phthisis pulmonalis, and one from heat apoplexy in a European officer. Excluding the two cases of phthisis pulmonalis, who had been gradually sinking for years and that of heat apoplexy, which was fatal in a few minutes, the death rate I am inclined to think rather small, considering the number of men under treatment during the year.

7. The lines are clean, well built, and well kept, but would be improved greatly by having roof ventilation, like those occupied by the 9th Regiment Bombay N. I. in this station.
Lines.
8. Water is abundant and good, obtained from the river Saburmuttee and wells in the lines. I would suggest that these wells should be thoroughly cleaned out at the end of every hot season.
Water.
9. The new latrines are in my opinion revolting to every man having the slightest sense of decency. In the regiment they avoid them to my knowledge when they can do so, going beyond cantonment limits when they have occasion for their use, rather than suffer the inevitable exposure. Those of the females are too near those of the males, and the remarks as to those of the males, are equally applicable to those of the females, with regard to their indecency. There are excellent latrines, now disused and closed up by order, that could easily be made available for the Dry-earth conservancy system, and be convenient in every way.
Latrines.
10. The hospital accommodation is excellent as far as it goes. There is great want of a deadhouse, which would serve for both regiments, a female ward, and a separate ward for contagious diseases. The hospital assistants have no privy for their families and no cookroom.
Hospital.
11. The camp bazar is good and well supplied with ordinary articles required by the troops; most of the men, however, prefer to get their supplies from the city bazar, where they can obtain them of better quality and cheaper. Native and Europe vegetables are to be obtained, in both bazars, of good quality and at a reasonable price. Fish can also be obtained of good quality.
Bazar.

H. M.'S 9TH REGIMENT N.I.

AHMEDABAD.—In Medical Charge of Surgeon R. BOUSTEAD, F.R.C.S.; Strength 472.

Ahmadabad, formerly the capital of the Guzerat kings down to the time of the Emperor Ackbar, A.D. 1580, has been under British protection and rule since the fall of the Peishwa in A.D. 1818. It was at one time the most splendid city in India, counting its thousand stone musjeeds, each with two minarets—the architectural gem of which is the Ranee-Sipri-ki-Musjeed, though the more imposing Jama Musjeed, with 260 columns and 15 domes, is still considered by many the most beautiful in India.
Ahmadabad.
British Rule
Architecture.

It had its magnificent palaces, fountains, courts of justice, caravansaries, Hindoo temples, and the still beautiful ornate and sunken shrines of the Jains, many of which are still in existence, and the ruins of others can be still inspected. The city is built on the banks of the Saburmuttee river, outside the fortress and arsenal, and extends thence in a north-easterly direction towards camp, about 2½ miles in the irregular and crowded manner characteristic of eastern cities. It contains a population, according to the last census, 1872, of 111,680 souls, consisting of 55,626 males and 56,054 females of all classes, the details of which are as follows:—
Situation.

						Total.
Hindoos	{	Males...	...	...	37,874	75,896
		Females	...	...	38,022	
Mahomedans ...	{	Males...	...	...	11,753	23,425
		Females	...	...	11,672	
Bhudists	{	Males...	...	...	5,546	11,596
		Females	...	...	6,050	
Christians	{	Males...	...	...	170	264
		Females	...	...	94	
Others	{	Males...	...	...	283	499
		Females	...	...	216	

and 33,663 houses, or about 3·3 inhabitants to each house. The city is surrounded by a wall, at least 16 feet high and six feet in thickness, built of burnt bricks and lime mortar. At about every eighty or one hundred yards along this wall, there are bastions and towers, some of which are guarded by native troops. The wall constitutes an irregular, semi-circular

enclosure, whose perimeter is about six miles. On the west side it runs due north and south, along the banks of the Sabarmuttee river. On the north side it runs eastward, then tends south-east towards the Premabhoy gate, then southwards a little past the Kalipur gate, bending inwards, and again it juts out of the gate south of the railway station, running west to the Astorea gate.

The streets of the city are well lighted with kerosine lamps. The roads are good, though narrow. The water-supply is ample by wells and a system of cisterns. But the sanitary arrangements of this large city are very questionable, judging from the vile and mephitic odours that assail one everywhere, when passing through its byeways.

The main roads, leading from the city to the cantonment, are excellent, being formed—for the want of stone—by the brick and mortar ruins of Ahmedabad's ancient grandeur, which are being gradually cleared away, to give place to more recent and more humble structures. They are watered up to the boundary line of the cantonment, morning and evening, to keep them compact; and they are well shaded by a fine avenue, two miles in length, of large trees, chief of which are the *Ficus Indica*, *Azadirachta Indica*, *Magnifera Indica*, *Ficus Religiosa*, *Tamarindicus Indica*, and *Acacia Arabica*.

The roads within the cantonment are similarly shaded but never watered; they are consequently some inches deep in impalpable desiccated dust, which in the hot months penetrates even the clothes that are worn, and, during electrical conditions of the atmosphere, is most distressing to respiration. I am not sure that the constant inhalation of this fine dust for several months in succession is not a grave cause of many of the lung affections that are observed here.

The cantonment of Ahmadabad is a large military station, about 312 miles by rail from Bombay, 90 miles from Deesa, 130 from the hill sanitarium at Mount Abu, and 150 from the marine sanitarium of Teetul. It is the seat of the head-quarters of the Northern Division of the Bombay Army, comprising the Brigade of Deesa and the stations of Baroda, Rajkot, Bhooj, and Surat. It stands about 320 feet above the level of the sea, and is situate in latitude $23^{\circ} 18'$ north, longitude $72^{\circ} 27'$ east, about 3 miles in a north-easterly direction from the city. The extent of the cantonment has an area of 3 square miles 212 square acres and 3,610 square yards. It is bounded on the north by the cultivation and fields pertaining to the village of Hursole; on the east by the cultivation and grazing ground of the village of Nuroda; on the south by the city of Ahmedabad, and on the west by the Sabarmuttee river. It is altogether very favourably situated and contains within its area 5,217 inhabitants. The bazar stands to the extreme westward of the cantonment, on the bank of the Sabarmuttee river, and contains 1,883 inhabitants—men, women, and children, consisting of 1,001 males and 882 females, detailed as follows:—Hindoos 1,332, Mahomedans 480, Bhudists 24, Christians 31, and others 16. There are 634 dwellings and shops of a poor description, being 2.97 or nearly 3 persons to each house. It resembles other cantonment bazars very closely, and merely adapts itself to the immediate wants of the residents in camp, and may be considered a poor one. The sanitary state of the bazar may be said to be satisfactory, although it necessitates constant surveillance to keep it in a clean and healthy state.

Conservancy. Serjeant Sullivan is very energetic and pains-taking in rendering his assistance to this end.

Vaccination. Vaccination is especially attended to amongst the bazar people and camp followers, and it has had excellent results. Not one case of small-pox having occurred during the whole year.

There is no spirit of competition or advancement in any of the dealers residing within its limits; all is combination against the foreigner and the native soldier, the consequence is that most of the sepoys purchase all they need for the week in the city bazar on every Friday, which is both the Brigade holiday and market day.

The soil in and around camp is very sandy, but as it gradually extends beyond, it emerges into a sandy loam, and still further distant into a rich black alluvial deposit which is very fertile. The surface is flat, without marshes or swamp, is slightly undulating here and there, and well wooded with fine old forest trees.

Cultivation is most abundant around the camp and all over the adjacent country. The crops are chiefly cereals and oilseeds, jowaree, muth, and bajree with some rice, barley, gram, castor-oil, til, and cotton.

Vegetables of all kinds, including potatoes, are plentiful in certain months of the year, and are easily raised; but during the hot season, when they are most particularly required, they are scarce or unobtainable, and are so expensive as to be quite beyond the means of the native soldier. I have no doubt, whatever, that the want

of fresh vegetables at this season of the year, contributes very largely to produce that scorbutic cachexia which can be distinctly seen, running like a thread, through all those low and anæmic forms of disease, that strike down so many of our worst cases towards the close of each year.

It would be well to introduce and encourage the rearing of vegetables at all stations by the sepoys on small allotments of land, conveniently situate near the lines, in the form of *soldiers own kitchen gardens*. The men by this means would have healthy out-door recreation, and the more important prophylactic usefulness of a fresh vegetable diet *ad libitum*. I strongly recommend this measure, it would involve no expense to the Government who might obtain seeds and issue them at prime cost to the men.

Meat is abundant, but of very poor quality and void of nutrition, and it is a hardship and an injustice to the native soldier that such poor and expensive meat should be permitted to be killed or sold in the cantonment bazar. From enquiries made, it appears that the most emaciated starvelings are selected, first for the bazar, in order that they may not die a natural death beforehand and thus be a loss. The most of the well-conditioned animals being reserved for the Bombay market, the remainder are kept to weather the scarcity of grazing, which the parched plains afford during the hot season, and by the time these are slaughtered, they are as wasted and unnutritious as the first. Even to the European hospital the issue has been so bad as to have to be condemned by a special board.

Game of most kinds are tolerably plentiful, neilghae, antelope, black-buck and chikara, bustard, snipe, quail, partridges, hares, and wild fowl abound all over Guzerat, and fresh water fish can be had all the year round—some very good, but mostly of a soft muddy inferior flavour.

The water-supply in cantonment is ample for all purposes from numerous wells of excellent construction, properly guarded by masonry and drainage channels. There are nine wells for the sole use of the regiment, some of which are overhung by trees, whose fallen leaves contaminate them more or less with organic matter, and these should be removed. The water is bright, sparkling, and pure, and as wholesome as most of the spring-water in the presidency. It contains a slight excess of chloride of sodium, but not so much as to affect its suitability as good potable water; yet, notwithstanding the known purity of this spring-water, a large number of sepoys obtained water from the Saburmattee river, which is more saline, and the purity of which is most doubtful. I have endeavoured as much as possible to check the use of the river-water, but it is difficult to overcome the prejudices of natives. If it is continued to be used as at present, it is very likely to become a source of disease, for the reason that all along its course, men, women, and beasts, wash and clean their persons and their filthy attire in the stream, polluting it proportionately. I have seen sick and convalescents from the camp and adjacent villages purifying themselves, and a leper cleansing his foul ulcers and stained rags in the river. Nothing short of an order involving punishment for disobedience, will prevent a large use of this river-water by the native troops, although it is tainted in this dangerous and disgusting manner. The Saburmuttee is a perpetual stream.

The climate is one of extremes: in summer, from March to June, it is very hot, necessitating punkahs and tatties, and in winter, from November to March, very cold, requiring the warmest clothing and occasionally fires. In both seasons it is very dry. This year was characterized by an unusually hot summer and a remarkably heavy rainfall. The hottest months were March, April, May, and June; the month of June being hottest in the year, with an average maximum heat of 105° F. in the shade, within the hospital building; and an average minimum of 75° F., the average range of the thermometer during the month being no less than 30°.

The coldest months were January and February, with a maximum heat of 80° and 88°, and a minimum of 35° and 33°, respectively, the average range of the thermometer being about 45°.

The heaviest rainfall in the month of July, 17 inches and 38 cents, fell in the 21 days that it rained during that month. In August it rained exactly the same number of days; but it registered only 6 inches and 18 cents. Amount of Rain. The total rainfall for the year (1872) amounted to 32 inches 18 cents, which is higher than has occurred for some years past; thus there fell within the area of cantonment limits alone, no less than 1,541,725,333 imperial gallons of rain, equal to 6,882,702½ tons in weight. The rainfall for the years 1869 and 1870 were 23 inches and 25 inches 35 cents, respectively.

Meteorological Observations, noticing the temperature and humidity of the air, the fall of rain, amount of cloud, the prevailing winds, &c.,
for the year 1872.

YEAR AND MONTH.	Localities at which Observations were made.	Temperature of Air.							Dry and Wet Bulb.		Rain.		Wind.		Cloud.		REMARKS.
		Highest in the month.	Lowest in the month.	Range in the month.	Mean of all highest.	Mean of all lowest.	Mean daily range.	Approximate mean for the month.	Mean of dry bulb.	Mean of wet bulb.	Number of days it fell.	Amount collected.	General Direction.	Estimated strength.	A.M.	P.M.	
		°	°	°	°	°	°	°	°	°							
1872.																	
January ...	H. M.'s 9th Regiment Hospital, Ahmadabad.	88	48	40	71	55	26	68	70	69	...	...	E.S.E.				
February ...		98	49	49	87	57	30	72	72	57	...	...	N.E. & N.W.				
March ...		108	59	49	99	71	28	85	83	69	...	...	N.W.				
April ...		112	70	42	103	79	23	91	88	75	...	...	N.W.				
May ...		118	84	34	107	86	21	96	92	81	...	...	N.W.				
June ...		120	80	40	109	88	21	96	91	84	9	6-23	S.W.				
July ...		107	80	27	104	84	20	95	84	82	21	17-38	S.W.				
August ...		97	78	19	86	79	7	87	83	81	21	6-18	N.W.				
September ...		98	79	19	90	79	11	84	84	81	7	2-39	S.W.				
October ...		91	68	23	87	75	12	81	83	74	...	...	N.N.W.				
November ...		87	64	23	85	72	13	78	81	67	...	...	N.N.E.				
December ...		84	65	19	81	71	10	76	78	67	...	...	S.E. & W.				
Mean...		100	69	31	93	75	18	84	82	74	58	32-18					

The cantonment is situate on a perfectly (practically level) homogeneous, self-draining sand, containing no known underlying stratum of clay or other impervious medium, and this topographical condition ought to secure it a healthy character; but that it is a malarious station is unquestionable; and it can only be accounted for by the soil being highly impregnated with organic matter, such as fallen leaves, decayed weed, and jungle, and in the immediate vicinity of the camp, the lines, and every adjacent village, the filth, litter, and excreta which being dessicated by the intense sun's rays, pulverized by various causes, and wafted to and fro by the changeable winds and electrical conditions of the atmosphere, is deposited over the widespread area, and then subjected to the decomposing effects of the moisture and heat of a tropical monsoon; this the sand absorbs and becomes contaminated, and when the fierce rays of the sun beat upon such a soil after the rains, the mephitic moisture is drawn up to the surface by capillary attraction, and gives off malaria of the most noxious kind.

The decomposition of all the roots and fibres, which are always left in the earth, of the dry crops alone, over such an immense tract of country as is cultivated, add materially to the mischief; and the filthy habits of the natives of every gaum, and even those within the cantonment, are so disgusting as to account for a very considerable portion of the malarious disease extant. These are highly probable, if not certain causes of disease, and they are preventible and removeable causes, and should be attacked rigorously.

The entire civil native population of all cities, cantonments, and villages, should be legally compelled to have proper domestic latrines, well arranged, and with appointed places at a distance to deposit the filth.

The lines are situated to the north-west of the cantonment; they face south-east, and are in close proximity to the bazar. Their situation is favourable were it not for some closely adjacent nullahs, which are too largely used as latrines by both the troops and the camp followers.

They are built in blocks, two deep, and divided by a main street 45 feet wide, and in rows of sixteen, each divided by a cross street 25 feet broad, as in the sketch I append. The native officers' houses are on the north—one opposite each block—they are ample and commodious, and in good repair. The rear ground and school and the regimental wells are also on the north, the store room, quarter-guard, and armoury face south.

Each block is divided into 24 dwellings, consisting of an inner room and verandah, the attached form gives the measurements and cubic space of the dwelling of each native officer, non-commissioned officer, and private. The huts and subsidiary buildings are in very fair repair, they are tolerably cool, and well shaded by large trees; but they are small, low and dark, and in the rains damp and murky. I strongly advocate a much more liberal grant of cubic space, and a better description of dwelling for the native soldier than now exists.

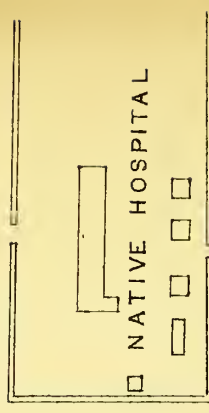
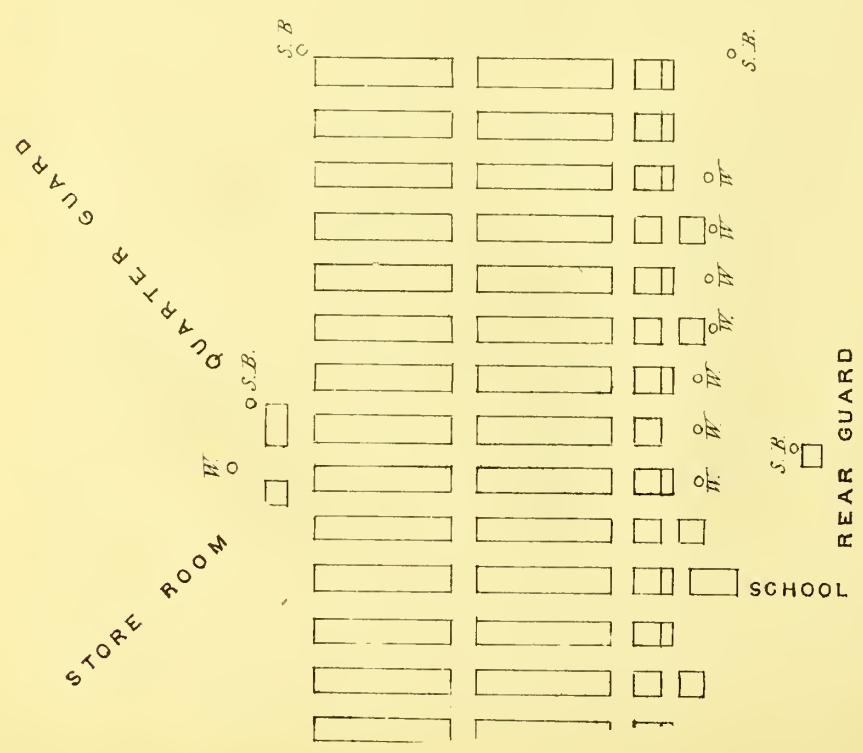
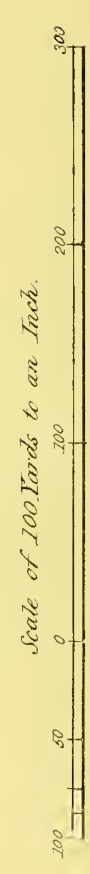
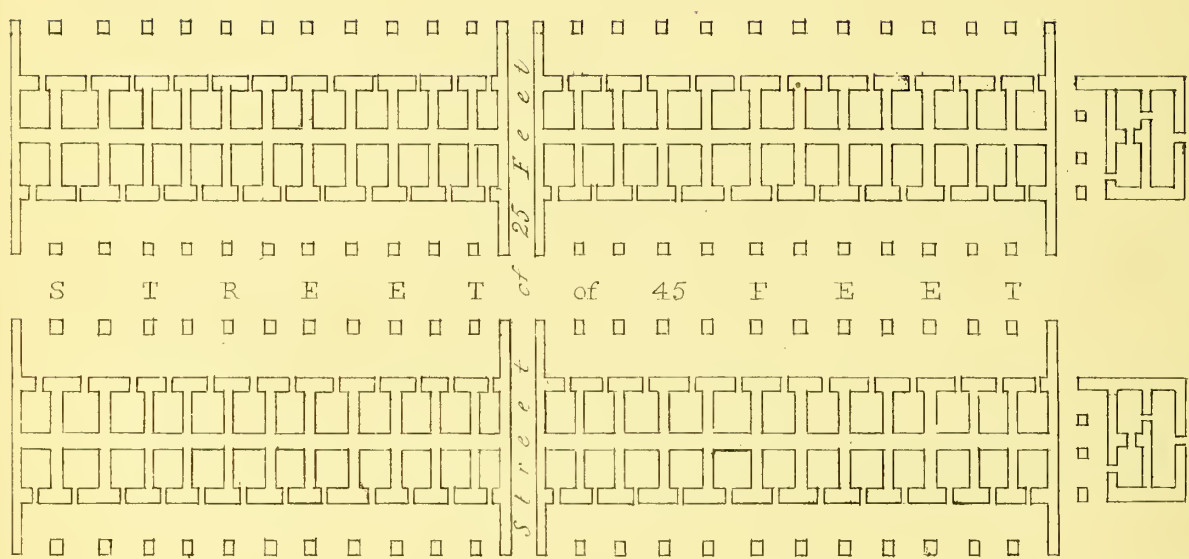
It is said there are no cess pits within the lines, the refuse water with all its impurities is thrown out on the ground, in front of each dwelling, and allowed to evaporate; and there is a channel which conveys impure water from the interior of the hut through an opening in the wall to the street in front, where it is allowed to flow at large. Both these arrangements are objectionable, but it is difficult to suggest any other that the natives would accept and use.

There can be little doubt that at night every one of these receptacles, within the dwellings, are used as urinals, if not also as latrines, by every member of the family, for the reason that the proper latrines are situate some distance from the lines; and cold, fear of the dark, and laziness combined, deter them from making use of them—thus, there is a pregnant cause of disease, in each dwelling, throughout the lines. Every morning these channels are sluiced from the interior of each dwelling with water, and the liquid filth flows over the ground within a yard or two of the huts, to generate its miasma to the detriment of all around.

Should a case of cholera occur at night, and the discharges be sluiced in this manner through these channels to the open ground within the lines, the consequences might be very serious. When we consider that this objectionable system exists in all, or almost all the native regiments in the presidency, it suggests an urgent remedy.

The guardroom and cells are in good repair, and sufficiently roomy for all purposes.

There is no gymnasium to afford the men healthy recreation. I would strongly recommend a covered shed being built for this purpose.



The system of regimental conservancy has been entirely altered during the year. Formerly the standard pattern of permanent latrines was used, but recently the Government of India ordered a system of Trench-latrines to be introduced. Long trenches are dug by the sweepers, one foot deep, on a spot of ground indicated, and these are filled in daily, fresh ground being opened up every morning a few feet distant from the last. Canvas screens are placed around the trenches for the sake of decency, and these trenches are gradually extended until sufficient ground has been used, when they are to be ploughed up cross-wise or in a decussate direction, and utilized for cultivation. This system theoretically looks well, but practically it is faulty. The soil here is too sandy, the men do not like it, they avoid using the trenches whenever they can; the women hate it, and consider it an indelicate arrangement, privacy is impossible, the deodorization of the trenches in this sandy soil is incomplete, and the natives decline to cultivate the ground so used; so that every object for which the system has been introduced is frustrated. My own opinion is that the arrangement is ill-adapted to the description of soil that exists here, and that the old system, pending a better one, is the best for Ahmedabad. The Dry-earth system could be carried out in the old regimental latrines, if the native soldier would overcome his prejudices, and the saturated earth could be removed to a distance; or, if that was impracticable, a latrine pan with double cells, well dammed—one for excreta, the other for urine—and washing water could be used; this pan could be made to slide in grooves, or run in and out on small wheels in the seats of the existing latrines. A design of what I allude to shall be forwarded. In any system of latrine that may be considered best, a good lamp (or two) should be placed to encourage their being used at night, and for other manifest reasons.

HER MAJESTY'S 9TH REGIMENT N.I.

Native Officers' Quarter.

								Feet.	Inches.
Length	...	...	...	...	...	...	...	22	0
Breadth	...	...	...	...	...	...	...	10	0
Height of inner-wall	...	...	...	...	...	...	...	12	9
Height of outer-wall	...	...	...	...	...	...	...	8	6
Area	...	...	...	...	...	...	... Square.	220	0
Cubic space	...	...	...	...	...	...	... Cubic.	2,805	0

Verandah in front of do.

Length	...	...	...	...	...	...	...	24	0
Breadth	...	...	...	...	...	...	...	5	6
Height of outer-wall	...	...	...	...	...	...	...	5	6
Height of inner-wall	...	...	...	...	...	...	...	8	6
Area	...	...	...	...	...	...	... Square.	132	0
Cubic space	...	...	...	...	...	...	... Cubic.	1,122	0

Verandah in rear of do.

Length	...	...	...	...	...	...	...	24	0
Breadth	...	...	...	...	...	...	...	8	0
Height of inner-wall	...	...	...	...	...	...	...	9	6
Height of outer-wall	...	...	...	...	...	...	...	5	0
Area	...	...	...	...	...	...	... Square.	192	0
Cubic space	...	...	...	...	...	...	... Cubic.	1,824	0

Non-Commissioned Officers' house.

Length	...	...	...	...	...	...	...	10	6
Breadth	...	...	...	...	...	...	...	10	3
Height of inner-wall	...	...	...	...	...	...	...	13	0
Height of outer-wall	...	...	...	...	...	...	...	8	6
Area	...	...	...	...	...	...	... Square.	108	0
Cubic space	...	...	...	...	...	...	... Cubic.	1,404	0

Verandah of Non-Commissioned Officers' house.

Length	...	...	...	...	...	...	...	11	6
Breadth	...	...	...	...	...	...	...	5	0
Height of inner-wall	...	...	...	...	...	...	...	7	8
Height of outer-wall	...	...	...	...	...	...	...	5	0
Area	...	...	...	...	...	...	... Square.	57	0
Cubic space	...	...	...	...	...	...	... Cubic.	437	0

								Feet.	Inches.
<i>Sepoy's house.</i>									
Length	...	...	...	...	...	...	...	10	6
Breadth	...	...	...	...	...	...	...	8	3
Height of inner-wall	...	...	...	...	...	...	...	13	0
Height of outer-wall	...	...	...	...	...	...	...	8	6
Area	...	...	...	...	...	...	... Square.	87	0
Cubic space	...	...	...	...	...	...	... Cubic.	1,130	0
<i>Verandah of Sepoy's house.</i>									
Length	...	...	...	...	...	...	...	8	9
Breadth	...	...	...	...	...	...	...	5	0
Height of outer-wall	...	...	...	...	...	...	...	5	0
Height of inner-wall	...	...	...	...	...	...	...	7	8
Area	...	...	...	...	...	...	... Square.	44	0
Cubic space	...	...	...	...	...	...	... Cubic.	337	0

Strength of the regiment excluding European officers	...	...	...	...	...	...	...	...	472
European officers	...	...	...	...	...	...	...	...	5
Hindoos 429, Mussulmans 38, Christians 5	...	...	...	...	...	...	...	...	472
Married men 370, children 332	...	...	...	...	...	...	...	...	702
Unmarried men 102	...	...	...	...	...	...	...	...	102
Recruits	...	...	...	...	...	...	...	...	23

The duties of the regiment have been very light notwithstanding its reduced strength; through having detachments at Sadra, Burda Chowky, and Dwarka. Each private soldier has had 4 nights in bed in the week, the naiques have had $3\frac{3}{4}$ nights, the drummers $4\frac{1}{2}$, and the havildars $3\frac{1}{2}$ nights a week. The parades are easy and not of a lengthy duration. I have found that during active work, drill-musketry, &c., the men are in better health and spirits than when they are idle and inactive, and I am of opinion, that a little more route-marching or employment on public works, such as road-making, improving the camp, building butts and entrenchments, would be highly conducive to good health. At present the sepoy has not sufficient work of the proper description to keep him in the active and healthy state so necessary to a soldier.

The clothing of the native army is faulty. It should combine sufficient protection from heat and cold, with perfect freedom of movement for the body in every position; it should also be durable and soldier-like in appearance. At present it embraces none of these advantages. It now consists of a tight fitting, close, scarlet tunic, buttoned at the throat, and tightly round the waist; it is insufficient during the cold weather, and too warm during the hot season; yet, it is worn during both winter and summer. The tightness cramps the marching powers of the men most materially, and is, undoubtedly, a cause of some of the chest affections which carry off a considerable number of the men in the Bombay command every year. The dark-coloured cloth, tight-fitting trousers, are very unsuitable to a sepoy, whose native robes are so free and airy. The Turkish trousers and gaiters—very similar to the French Zouave pants—are much more suitable; and with a loose red serge patrol jacket, or a Norfolk jacket, would be much more suitable. The kakhee or white drill could be substituted in the hot weather of the same pattern.

The dark blue cap without rim or peak is not a sufficient protection from the sun during the hot months; a turban or padded roll should be worn round the cap to protect the temples from the sun. But if prejudice could be overcome, the helmet issued to European troops (or a modified one like a forage cap with turban) would be the most suitable. The boots are too frequently badly fitted, and are scarcely ever greased or softened; they are also heavy, and often gall the men's feet severely, producing sores which are trivial in appearance but very difficult to heal, requiring rest and a treatment of frequently several weeks' duration. It would be well to have a boot-greasing parade in the lines once a week, for both cleanliness and comfort. The men never wear socks or stockings, consequently, the boots become very hard and gritty from perspiration and dust which adhere to the feet, and, as they exist at present, I feel sure that many men would be placed completely *hors-de-combat* by an ordinary march of three days in succession.

The food of the native soldier varies considerably according to caste. The Sikhs, Purdasees, Chutrees, and Brahmins eat no meat, nor fish, nor eggs, nor anything that has within it the germs of animal life. The Mahomedans eat any meat, except that of the swine. The Hindoos, Mahrattas, Madrasees, and Deccanees, can eat fish and any meat, except that of the sacred cow. All the other castes and creeds eat any meat they can procure. The accompanying Form C gives the

Food.
Castes.

Daily food of each caste.

sufficient in quantity, providing they actually consumed it; but I am inclined to think, on enquiry, that few of them eat so much as is there stated, on account of the custom which prevails amongst the natives of sheltering and feeding many relatives; the more of these a man has around him, and sponging on him, the less he can procure for himself. There are numbers of men with so many dependants that they are compelled to underfeed themselves, and they are, consequently, so much less fitted for the duties of a soldier. This praiseworthy effort to support poor relatives by starving themselves, has such an injurious effect on the stamina of the men, that it should be discouraged on all occasions or altogether prohibited.

Average strength of
regiment.

The average strength of the regiment at head-quarters for the year amounted to 472 of all ranks—not including European officers—consisting of about 2 Indo-Britons, 3 Christians, 6 Sikhs, 23 Rajpoots, 38 Mahomedans, 43 Brahmins, 70 Purdasees, 166 Mahrattas, and 121 of other castes. Form D.—The age, length of service and castes of the regiment at head-quarters is given in the accompanying Forms D and E, and in quinquennial periods, by which it will be seen that those between 15 and 20 years' service are the most numerous; and the next in numerical strength are those under six years' service. There are 370 married, and 102 unmarried children. men, and 332 children in the above strength at head-quarters.

There were 650 admissions into hospital from all causes during the year, being 229 more

Form F.

than last year, although over one-third of the regiment was absent from head-quarters on detachment duty at Burda Chowky and Dwarka; thus the regiment may be said to have been much more unhealthy than it has been since 1869, yet there were only three deaths during the year: one from atrophy (gradual wasting away without disorganization of any special gland or texture), the second from remittent fever, and the third from typhoid fever.

Deaths.

The prevailing diseases have been fever, dengue 269 cases, ague 234, conjunctivitis 38, dysentery 14, and boils 13, contusions (including shoebites) 10, chronic rheumatism 5, diarrhoea 5, abscess 4, hernia 3, eczema 3, psoriasis 3, scabies 3, remittent fever 2, typhoid fever 2, bronchitis 2, phthisis 2, gumboil 2, toenia solium 2, orchitis 2, oedema 2, urticaria 2, burns and scalds 2, simple cholera 1, syphilis primary 1, scrofula 1, atrophica 1, paralysis 1, trichiasis 1, inflammation of the ear 1, asthma 1, pleurisy 1, quinsy 1, jaundice 1, gonorrhoea 1, epididymitis 1, nodes syphilitic 1, ulcer 1, debility 1. These are placed in their order of frequency.

The average daily sick was 14·7. The proportion of sick per cent. to strength was 140·2

Average daily sick, &c.

The proportion of admissions to strength per cent. was 137·7. The proportion of deaths to strength per cent. 0·6. The number invalided in 1872 was 23, the number enlisted 25, and the number that proceeded on sick certificate for a change of air was 6.

Heat associated with
special disease.

The unusual heat this summer was associated with an epidemic of dengue fever and several fatal cases of heat apoplexy at this station.

The epidemic of dengue in May and June swept through the cantonment with unusual virulence, and was most impartial in its attacks, sparing almost none.

Dengue.

The healthy and robust were stricken down in common with the feeble and the young. Age, sex, and condition, exempted none, and entire households—parents, children, and their domestic servants—being all prostrated by it at the same time. The hospitals were overcrowded to an extent seldom witnessed. Guards had to be reduced, and duty considerably lightened from the difficulty to muster sufficient healthy men. The commencement of an attack of dengue was frequently sudden and without warning—a slight rigor, a flushed countenance, and an accession of ardent fever and utter helpless prostration, with racking pains in every joint, being the work of an hour. Men were smitten by it while at meals, when in the act of cheerful conversation, or on duty, who a few minutes previously were to all appearance in perfect health. The symptoms at the commencement of an attack of dengue were most erratic; in some the acute pains were simultaneous with the first flush of fever; in others pain was comparatively absent, until the eruption and all febrile symptoms had vanished and convalescence had commenced; in many the eruption was the first symp-

tom visible; in others vomiting and general *malaise*, but in all cases there was a remarkable uniformity in some of the symptoms of dengue; for instance, the eruption was never wholly absent, nor was the foul, creamy, clammy tongue, with complete loss of taste. Albumen in the urine, more or less, was invariably present, especially on the subsidence of the eruption; and anorexia, frontal headache, and suffused conjunctiva were observed in every case. Every form of

Treatment. treatment was adopted with pretty much the same results—colchicum and belladonna with chlorate of potass was of decided benefit, but the eliminative treatment succeeded best in my hands. Unlike other epidemics, the latter cases of dengue presented a much more severe type than the first—hyperpyrexia and delirium being very common and in some instances very alarming. Aconite and conium in these cases acted most favourably. In two or three marked instances of severe pulmonary apoplexy, consequent on dengue, 8 and 10 drop doses of nitrite of amyl, repeated every two hours, worked like a charm; the pulmonary and systemic capillaries, under its influence, became steadily relaxed and remained so; the venous circulation became much freer, so much so as to reduce the lividity of the countenance, and the heart's action was in consequence considerably reduced, and the hyperpyrexia proportionately lessened. The internal administration (*guttatim*) well diluted, is much more satisfactory than by inhalation—it merely requires proper dilution.

An undoubted case of typhoid fever occurred in a sepoy of the regiment. He had been ailing for several days from general *malaise* and a confused headache before he came to hospital. He was admitted and treated for a day or two with diaphoretics (*sudorifics*) and a mild aperient of rhubarb and calomel but without benefit; his countenance looked heavy, dull, and oppressed, and the fever was continued; the tongue was of a deep yellowish-brown colour, moist and somewhat clammy; pulse 98, and steady; the bowels were irregular—loose one day and constipated the next—and the motions were very foetid and dark in colour; the temperature of his body by the clinical thermometer indicated $103^{\circ}3$ on the 2nd morning of his admission and about the 8th day after his first feeling ill; on the 3rd morning the temperature was $104^{\circ}1$ and at night it descended to 103° . On the 4th morning after admission, the thermometer registered $104^{\circ}6$ and at night it descended to $103^{\circ}3$, and after a motion, the bowels being loose and altered in character, it fell to 103° : the 5th morning the temperature was the same, but the bowels became more loose and putty-like, or of a light ochre or pea-soup colour; the abdomen became hard and tympanitic, flat, and bulged out on each side. No pain was evinced on pressure, except on a small circumscribed spot over the cæcum with a considerable amount of gurgling, both audible and perceptible by the hand, as if flatus and fluid in fermentation existed. On the 8th day the clinical thermometer rose to $105^{\circ}2$, and at night descended to $103^{\circ}7$, and the patient had slight delirium and a dull semi-comatose appearance. On the 9th day after admission several spots appeared over the abdomen and on the inside of the arms, and one on the throat—

Temperature. small papulæ and with a circumscribed irritable appearance around them. They disappeared for a moment on pressure, but re-appeared on removing the finger. These faded away during the course of the day and others, four or five, came out on other adjacent parts of the body on the 10th day. These disappeared on the 12th day, and were succeeded by one or two others on the 13th day, and on this day several motions were passed, of a dirty pink colour, as if uniformly mixed with a little bright arterial or red capillary blood, evidently from rupture or ulceration of the vessels of the highly inflamed, agminated, or solitary glands of the small intestines. After these motions, the thermometer indicated a reduced temperature of nearly 3° , having descended to $102^{\circ}8$ in the morning and $101^{\circ}3$ in the evening. The tongue at this period was red, glazed, and dry—redder at the tips and margins—and the pulse weak but steady at 110° . Wine, strong mutton-broth, &c., were given every two hours. These symptoms, alternately better and worse, continued until the 11th day after admission, when the temperature descended to $101^{\circ}4$ in the morning and $100^{\circ}2$ in the afternoon; the motions became somewhat healthier in character, the pulse 100 to 104, the tongue and skin became moister, and everything appeared satisfactory but a wheezing and slight difficulty of breathing set in. On examination the base of each lung, chiefly at their posterior aspect, were found to be congested or engorged, as if from gravitation of the blood from the continual recumbent position. Dry cupping at different times relieved this symptom, and the patient progressed satisfactorily, until the 16th day after admission, when diarrhœa set in and the motions were ochrey and very offensive, the thermometer (in the axilla) indicated an increase of temperature to $106^{\circ}5$, and at night it descended to $104^{\circ}7$. Slight hæmorrhage again occurred from the vessels of the agminated glands (peyers). Ulceration had set in with symptoms of perforation of the intestines; hiccup, increased pulse, slight delirium, &c.; the bowels were now very frequently moved, the motions were tinged with blood, and were very putrid and offensive; the tongue became dry, hard, glazed, and brown, in the centre fissured, and red at the tip and margins, and the pulse increased to 140—wiry and hard. The thermometer registered over 106° in the morning and $105^{\circ}1$ in the evening, when he became comatose and died the following day.

This patient progressed very satisfactorily up to a certain point, about the 15th day after admission and the 24th day from the first symptoms of illness, when the fatal lesion of the bowel occurred, and then he rapidly sank.

The treatment in this case consisted of a mild calomel and rhubarb aperient, with a little taraxacum given on admission, followed by acetate of ammonia, aconite and chlorate of potass, every three hours, during the gradual increase of the febrile heat. Tincture cinchona (succirubra) gum duca lipt rostratæ for the bowel complication, and phosphoric acid; strong soups, wine and arrack stimulants, were administered during the few days he felt better. The motions, as a sanitary precaution, were carefully buried deep in the ground, with lime and carbonate of lime sprinkled over them; and stained clothes were burned to ashes, and these also were buried. The room in which the man dwelt was well purified and whitewashed, and every precaution used. No case occurred afterwards.

A curious case of larvæ maggots within the nasal passages and in the cellular tissue of the face, came under my treatment. A young healthy man (a Hindoo by caste) rather thin and slight, was admitted into hospital, complaining of a swollen face and maggots within the nostrils; he had considerable irritative fever, and a dark grey grumous discharge from both nostrils; the eyelids were swollen and watery, and he had considerable difficulty in breathing, and appeared to be suffering from erythematous inflammation or erysipelas of the face. On examination, however, a large maggot was drawn out with the forceps, and a very mild injection of carbolic acid in water brought away several others half dead. On the following morning I extracted several others uninjured and kept them to be reared.

Ammonia was inhaled as strong as could be borne and it brought away a few more. The fumes of acetic acid, on a hot tile, brought away a few, and the vapour of carbolic acid, on a hot brick, gently inhaled, answered pretty well while they continued in the nasal passages; but they had burrowed and formed sacs or cysts, containing several in each, all over the face, and under the frontal aponeurosis beneath the orbicularis palpebrarum at its lower aspect, and the compressor naris, and below the zygomatici muscles on each side, each cell and channel had to be punctured and flooded with weak solution of iodine. Tincture iodine ʒi, aqua ʒiii. This either destroyed them *in situ* or drove them out into the nasal passages, where they could be picked out.

Weak solution of carbolic acid, chloride of lime, turpentine in oil, did not succeed; iodine alone seemed to kill them, though not immediately, and it had the advantage of destroying the fine secreting membrane which each sac was beginning to assume, and which might have become a permanent fistula. No great irritation was set up by this treatment. I fed some of the larvæ on liver for a few days, when each became dormant and about to become a chrysalis which I placed on dried horse dung in a bottle. Others I preserved in spirits which I beg to forward herewith for inspection and further investigation. On the 26th day two of them became large grey flies which I found clinging to the sides of the bottle, on the 27th day three others were liberated, and on the 31st day the last one came forth. They were bright clean and healthy insects, nearly as large as an ordinary blue bottle fly, but longer and thinner in shape, each with a slightly bronzed pink tinge on the back and body, and a very fine pink stripe on each side of the head and back, and the colour was drab grey throughout; these I also preserved to forward, but unfortunately they were completely consumed by black and small red ants during the night, the pins only remaining.

Skin-grafting in shoesores and all indolent ulcers has been very successful, especially in cases that present a low cachectic or scorbutic taint. (Such cases are most frequently admitted into the General Staff Hospital). But there are certain facts not hitherto observed in skin-grafting to which I would call attention, as I consider the operation would be incomplete without their observance. The operation is simple, it consists in denuding an ulcerated surface down to healthy structure and thereon planting and fixing a piece of healthy skin taken from another part of the body or from another person, which will in a day or two soften down and disappear; but it has already germinated and taken firm root, and new skin will in time appear like a little speck or island in the centre of that spot, and it will gradually grow and extend until the periphery is reached in a stellate, branching, or irregular manner.

Briefly then—the skin consists of an external covering of epithelium—"the epidermis" next to which is the "cutis vera"—and below that the vascular tissue, named the "corium," and with each of these component parts successful grafting can be accomplished. Even a thin layer of true epithelium alone will engraft itself and grow, so will a piece of the cutis vera, stripped of its epithelium, as will also a layer of the true vascular corium; but the resulting skin is not in either case perfect. A piece of healthy skin, consisting of all three, is generally used, and is almost always successful; but I am of opinion, that even a deeper layer of skin is necessary, including those structures situate beneath the corium, which have special and dis-

tinct functions, such as the sudoriparous and sebaceous glands, the sensitive papillæ, adipose tissue, &c., each of which has its own special bioplasm; and corresponding tissue will be accordingly reproduced. If, however, the bioplasm of the sensitive papillæ be not included in the graft, skin will be reproduced wanting in sensibility; nor will sudoriparous glands be found in the new skin, unless their peculiar bioplasm be also engrafted. I now invariably

Proper grafts.

cut out and transplant deep thick grafts, including all the structures, and clip out with scissors a corresponding bed in the ulcer, in which I deposit it quickly, and strap down with plain cloth, rendered adhesive all over, except the portion which covers the graft. I do not disturb it until after the 5th day; the margins can be kept clean morning and evening by a piece of wet tow.

Skin-grafting is the easiest and quickest mode of healing old indolent ulcers that I know; but it is necessary to use deep grafts to give vitality and strength with sensibility to the new skin.

Utility.

Re-vaccination, in accordance with circulars No. 3125, dated 13th September 1872, and 1330 of 1872, dated 19th October, ultimo, could not be carried out regimentally. The Commanding Officer declined to place any men at my disposal for the purpose. I, therefore, took advantage of the annual invalids of several regiments that were attached to my hospital, and

Revaccination in persons protected by small-pox and vaccination.

re-vaccinated them all—58 in number. Six of that number only were unsuccessful after the third operation, nine were successful after the second operation, and forty-three were successful after the first operation. Nineteen of these had small-pox, and were pitted with that disease,

Result.

six were pitted from previous small-pox, and were marked from vaccination also, and 27 had distinct vaccination marks, making altogether 52 successful cases. There were only six failures in 58 cases.

Vide Form H.

I may add that on several occasions, during my service, I have re-vaccinated cases that were well marked with small-pox, as well as vaccination marks, and did not consider the result very remarkable at the time.

Ordinary regimental vaccination.

Vaccination has been as extensively carried on as possible in the regiment. 41 children have been vaccinated since May last, two had to be vaccinated twice, making altogether 43 operations.

I have now alluded to everything of interest under my charge, and hope that it will meet with the approbation of the Inspector General of the Medical Department.

Conclusion.

SUMMARY of the Diseases for the year 1871-72.

								1871.	1872.
General Diseases...								271	508
{ A								15	8
{ B ... ..								...	1
{ Nervous system								14	39
{ Eye								1	1
{ Ear								1	...
{ Circulatory system								8	6
{ Respiratory system								29	36
{ Digestive do.								3	2
{ Urinary do.								1	2
{ Generative do. ... ..								...	3
{ Organ of locomotion								8	4
{ Cellular tissue								34	25
{ Cutaneous system								5	1
Condition not necessarily associated with Local or General Diseases...								...	2
Injuries ... { General								30	12
{ Local									

STATEMENT.

The Diseases by which these Deaths, as well as the whole admissions to Hospital hereto annexed B, whereof the following is an Abstract

DISEASES.	January.			February.			March.			April.			May.		
	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.
<i>General Diseases—Class I.—A.</i>															
1. Intermittent (ague) and remittent fevers	27	...	...	9	...	...	19	1	...	12	...	...	2	...	...
2. Enteric (Typhoid)—dengue and continued fevers ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. Cholera ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Class I.—B.</i>															
4. Rheumatism	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
5. Syphilitic diseases ... ..	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
6. Phthisis pulmonalis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7. Scrofulous diseases ... ..	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
8. Other constitutional diseases ..	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Local Diseases—Class II.</i>															
1. Diseases of the nervous system ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. Conjunctivitis	1	...	...	1	...	...	...	...	...	1	...	...	1	...	...
3. Other diseases of the eye ... ..	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
4. Diseases of the respiratory system ...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...
5. Diarrhœa	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6. Dysentery	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...
7. Other diseases of the digestive system	1	...	...	4	...	...	4	...	...	...	...	...	...	...	...
8. Gonorrhœal affections ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9. Other diseases of the urinary system	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10. Skin diseases	2	...	...	1	...	...	3	...	...	1	...	...	...	...	...
11. Other local diseases	1	...	...	2	...	...	2	...	...	2	...	...	...	...	...
<i>Condition, &c.—Class III.</i>															
1. General Debility ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	40	1	...	19	...	...	31	1	...	18	...	...	5	...	...

in the course of the year, have been occasioned, are specifically detailed in Return
—9th Regiment Native Infantry.

June.			July.			August.			September.			October.			November.			December.			Total.	
Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.	Average of weekly remaining.	Admitted.	Died.
4	23	...	...	12	...	...	54	...	...	58	...	...	16	...	...	236	1
43	199	...	...	12	...	...	7	...	...	7	...	...	3	1	...	...	...	...	271	1
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
...	2	...	...	1	...	...	...	...	...	5	...
...	1	...
...	1	...	...	...	...	...	2	...
...	1	...
...	1	1
...	1	...	...	...	...	...	...	...	...	1	...
1	6	...	...	11	...	...	10	...	...	3	...	...	1	...	...	2	...	...	38	...
...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
...	4	...
...	3	...	...	...	...	1	...	...	...	5	...
...	6	...	...	2	...	...	1	...	...	...	...	...	...	...	2	...	...	...	14	...
...	1	...	...	3	...	...	...	...	...	3	...	...	1	...	...	...	...	...	17	...
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
1	3	...	...	5	...	...	5	...	...	3	...	...	1	...	...	...	...	...	1	...
3	1	...	...	5	...	...	4	...	...	1	...	...	1	...	...	2	...	...	25	...
...	24	...
...	1	...	...	...	...	...	...	...	...	1	...
52	216	...	...	63	...	...	90	...	...	78	...	...	67	1	...	23	...	...	650	3

H. M.'s 9TH REGIMENT N.I.

The following table shows the proportion per 1,000 of admissions from ague in each month to treated and to strength :—

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Admissions ...	519.2	300	450.0	324.3	222.2	70.1	...	294.8	210.5	569.9	65.1	42.1
To treated—												
Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...
Admissions ...	62.6	21.5	36.0	24.3	4.5	9.0	...	46.4	26.6	100	10.8	32.4
To strength—												
Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...

The following table shows the proportion per 1,000 of admissions from dengue in each month to treated and to strength :—

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Admissions	736.8	839.6	153.8	122.8	75.2	22.4	...
To treated—												
Deaths
Admissions	95.2	44.9	24.2	15.5	13.2	3.7	...
To strength—												
Deaths

H.M.'s 9TH REGIMENT N.I.

Diet Table.

Description of food eaten by the various castes in the regiment :—

	Murrathas. Deccanees. Madrasees.	Sikhs, Pardasees, Chutrees, Brahmins.	Cocun Hindoos, and Purwarees.	Jews and Mussulmans.	Native Christians.
Flour, wheaten ...	lb. $\frac{3}{4}$	lb. $1\frac{1}{2}$	lb. $\frac{3}{4}$	lb. $\frac{1}{2}$	lb. $\frac{1}{2}$
Rice ...	" $\frac{1}{2}$	" $\frac{1}{4}$	" $\frac{1}{2}$	" $\frac{1}{2}$	" $\frac{1}{2}$
Ghee ...	ozs. 2	ozs. 3	ozs. 2	ozs. 4	ozs. 4
Dall ...	" 4	" 4	" 4	" 4	" 4
Mutton twice in week	lb. $\frac{1}{2}$	none.	lb. $\frac{1}{2}$	lb. 1	lb. 1 daily.
Bajree flour ...	" $\frac{3}{4}$	none.	" $\frac{3}{4}$	none.	none.
Vegetable ...	" $\frac{1}{4}$	lb. $\frac{1}{2}$	" $\frac{1}{4}$	lb. $\frac{1}{4}$	lb. $\frac{1}{4}$
Fish ...	" $\frac{1}{2}$	none.	" $\frac{1}{2}$	" $\frac{1}{2}$	" $\frac{1}{2}$

H.M.'s 9TH REGIMENT N.I.

RETURN of the Age and Service of the native rank.

AGE.		SERVICE.															
		Native Officers.	Havildars.	Naiques.	Drummers and Fifers.	Privates.	Total.										
55 and upwards	...	2	1	...	...	1	4	Under 5 years	...	...	...	...	2	135	137	
50 "	...	3	4	3	...	3	13	From 5 to 10 years	...	...	...	...	3	136	139	
45 "	...	8	9	12	...	27	56	" 10 to 15 "	...	...	1	3	4	49	57	
40 "	...	3	12	6	1	33	55	" 15 to 20 "	...	...	14	16	4	225	259	
35 "	11	11	3	131	156	" 20 to 25 "	...	...	2	8	2	2	11	25	
30 "	3	5	5	149	162	" 25 to 30 "	...	...	7	12	14	1	33	67	
25 "	3	4	123	130	" 30 to 35 "	...	...	3	4	5	...	10	22	
20 "	3	91	94	" 35 to 40 "	...	...	4	1	...	...	...	5	
18 "	30	30	Above 40	...	...	...	...	...	...	...	...
Under	11	11										
Total		...	16	40	40	16	599	711	Total		...	16	40	40	16	599	711

Men under two years' service...	...	...	...	...	...	...	...	...	...	42
Court Martial during the year	...	...	...	...	...	...	...	...	...	None.
Strength of Guard by day 64, by night 58	...	...	...	...	...	...	...	...	...	...
Nights in bed	...	...	...	...	...	...	...	...	...	4
Adults	...	...	...	...	...	...	...	...	...	97
Regimental School	...	...	...	{ Boys		...	...	...	...	87
				{ Adults		...	...	...	...	7
English School	...	...	...	{ Adults		...	...	...	...	...
				{ Boys		...	...	...	...	8

Native Establishment—Regiment.

Chowdree	...	...	...	...	...	...	...	...	...	1
Peons	...	...	...	...	...	...	...	...	...	2
Blacksmith	...	...	...	...	...	...	...	...	...	2
Bellows boys	...	...	...	...	...	...	...	...	...	1
Shoemaker	...	...	...	...	...	...	...	...	...	1

No.	Name	Rank	Age	Service	Remarks
17	Rameshwar Singh	Infantry	...	...	...
18	Ackbar Khan	Infantry	...	...	...
19	Tamajeev	Infantry	...	...	...
20	Sackjeev Sellar	Infantry	...	...	...
21	Balvanta Sawanth	Infantry	...	...	...
22	Babun Khan	Infantry	...	...	...
23	Koondleen Moolleek	Infantry	...	...	...
24	Narayenrow Salvee	Infantry	...	...	...
25	Nutkoo Singh	Infantry	...	...	...
26	Lithoo Rawool	Infantry	...	...	...
27	Luximon Rawool	Infantry	...	...	...
28	Sewram	Infantry	...	...	...
29	Kadum Alice	Infantry	...	...	...
30	Krishnajee Purab	Infantry	...	...	...
31	Babajee Powar	Infantry	...	...	...
32	Maladhak Itak	Infantry	...	...	...
33	Heernasthee Rammaither	Infantry	...	...	...
34	Luxoomun Maladiek	Infantry	...	...	...
35	Burjore Moorrie	Infantry	...	...	...
36	Ittoo Cuddum	Infantry	...	...	...
37	Balmather	Infantry	...	...	...
38	Juggunnath Dhanook	Infantry	...	...	...
39	Laxoon Mohita	Infantry	...	...	...
40	Shamrow	Infantry	...	...	...
41	Antoo Gawda	Infantry	...	...	...
42	Gunjee Jugtap	Infantry	...	...	...
43	Gooljar Khan	Infantry	...	...	...
44	Shaik Enam Bux	Infantry	...	...	...
45	Husnak Gonnak	Infantry	...	...	...
46	Munboode Singh	Infantry	...	...	...
47	Mool Set	Infantry	...	...	...
48	Lachmon Pursad	Infantry	...	...	...
49	Ramdeen Towaree	Infantry	...	...	...
50	Seetun Coombe	Infantry	...	...	...
51	Sevritun	Infantry	...	...	...
52	Radha Kisson	Infantry	...	...	...
53	Muthooro Pursad	Infantry	...	...	...
54	Jankee Pursad	Infantry	...	...	...
55	Gopal Singh	Infantry	...	...	...
56	Sadhow Singh	Infantry	...	...	...
57	Ambieka Doobay	Infantry	...	...	...
58	Shaik Lall	Infantry	...	...	...

H. M.'s 18TH REGIMENT N. I.

RAJKOT.—In Medical Charge of Surgeon E. SEXTON; Strength 619.

During the past year the sepoy of the 18th Regiment were engaged in constructing and finishing the regimental lines: the work was in general hard and continuous, and I cannot help thinking that it had an indirect effect in somewhat increasing the amount of sickness in the regiment, especially in the autumn months, during which a very considerable portion of the troops suffered from intermittent fever, occasioned, there is reason to think, by exposure to cold and damp air in the morning and a hot sun during the day.

A more direct effect of the building works on the sick report, may be seen in the number of contusions and other accidental injuries, nearly all of which occurred during the progress of the works. Towards the end of the year a large working party was sent to a neighbouring gheer or forest to cut wood, and although little sickness prevailed while the men of the party were actually engaged in the work of felling timber, a good many individuals were attacked on their return with a most severe, persistent, and intractable form of ague.

During the year 1872 there were 947 admissions to hospital as compared with 828 in 1871.

Of the whole number admitted in 1872 no less than 599, or nearly two-thirds, were cases of fever of an intermittent and remittent character. There were only five cases of small-pox among the troops, and three cases among the regimental followers; all these individuals had been previously vaccinated. The cases of chronic rheumatism have been numerous; but as this is the favourite disease of the malingering sepoy, it is, as every medical officer of regimental experience will admit, often most difficult to distinguish real from simulated cases.

Specific disease figures slightly in the returns as compared with the strength of the regiment; and this fact is the more noteworthy when compared with the wide-spread frequency of syphilitic disease in the province of Kattywar, existing either as the result of direct contagion or hereditary taint. Ophthalmic disease was not frequent during the year; the cases were, almost without exception, those of superficial inflammation of the mucous covering of the eye, owing to the impact or irritation caused by the presence of such foreign bodies as mortar, chunam, sand, or grit; and at no time did the affection assume anything of an epidemic character.

Disease of the lungs and respiratory system was rather infrequent. There were 16 cases of bronchitis, and only two of pneumonia, and two of pleurisy—one of the last mentioned having had a fatal termination.

There were no less than 96 injuries of an accidental nature, most of these were trivial, but a few were of a more serious character.

Nearly all these accidents happened in the lines where the new buildings were in course of construction, and a vast proportion was owing to the carelessness of individuals and the neglect of obvious precautions. No case of cholera occurred among the troops, their families, or the regimental followers, during the year.

Only three deaths took place in 1872, one from pleuritis, one from ague with hepatic and splenic enlargement and other complications, and another from ague attended with bronchitis and diarrhœa.

The rainfall in 1872 was considered abundant and seasonable; and although the exact quantity that fell, as measured by the pluviometer, was only 44 cents more than in 1871, it was much more continuous and more favourable for agricultural operations, the result of which is that food supplies are much cheaper and more abundant than in the previous year.

Since writing the foregoing, the memorandum of the Army Sanitary Commission on the Report of the Sanitary Commissioner, Bombay, 1870, together with the Inspector General's remarks thereon, have reached my hands. I am not aware of any special cause for malaria existing in the immediate vicinity of Rajkot. The country is open, cleared land, in general well cultivated, and free from swamps.

The cantonment is situated close to a native city, containing a population of upwards of 15,000 persons, all of whom, together with a vast number of animals, are pent up within its walls night after night, and inhale the noisome effluvia arising from a soil saturated with the excreta of men and animals for countless generations; this condition of things so universal in the East, cannot, however, be looked upon as a special cause of disease; for though such agencies are in constant operation all the year round, we find febrile afflictions only prevailing to any extent at certain seasons.

It is also worthy of remark that the lines of the 18th Regiment N. I. are much further removed from the city, and, consequently, from its insanitary influences, than those of the native cavalry and artillery, among whom fevers have been much less prevalent. In certain



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R^A

Thakur Burial Ground

Artillery Barracks

Garden

New Mahomedan Burial G^d

New Jews Burial G^d

Old Jews Burial G^d

Cattle Yard

Soldiers' Canteen
Sergeants' Mess
Sergeants' Quarters

Lock Hospital
Barracks

N.I. Batt^y

N.I. Batt^y

GENERAL PARADE GROUND

Road to Sadra

Well

Manure Yard

Comm^d Hay Stack

Comm^d Hay Stack

Dry Earth Shed

Artillery Hospital

Platoon F.N. Hospital

Church

Protestant Burial G^d

R.C. Burial G^d

Barracks

Comm^d Cattle Yard

Arch. Syce Lines

Ex. Engineer's Office

R.C. Chapel

Artillery Barracks

Artillery Barracks

Artillery Barracks

Artillery Barracks

Artillery Barracks

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Artillery Barracks

SKETCH

OF THE

AHMEDABAD CANTONMENT

Scale of 6 Inches to a Mile.

0 1/4 1/2 1 2 3 4 5 Furlongs



localities if men have been for a long time exposed to malarious influences, every slight febrile affection, caused by damp, chill, or exposure, has a tendency to assume an intermittent type; and would be very properly classed under the heading of intermittent fever, although, strictly speaking, it is more a revival of a dormant *materies morbi* than a fresh attack.

While on this subject, I may remark that the cases of ague among the men working in the gheer, which has a deadly reputation among the natives of the province, were in every way clear, well-marked types; generally, of the tertian and quartian kinds, and of most persistent and intractable character: whereas the men attacked in camp seldom suffered for more than a day or two, the disease being nearly always the quotidian form, and rapidly yielding to mild and ordinary treatment.

SQUADRON H. M.'S 2ND REGIMENT L. C.

RAJKOT.—In Medical Charge of Surgeon E. SEXTON; Strength 118.

The total strength of the 1st Squadron 2nd Light Cavalry is 118 officers, non-commissioned officers, and privates. The men are located partly in new lines recently completed, and partly in the old cavalry lines.

There is a plentiful supply of water near the Government garden, but a good many families have recourse to the well situated close to the hospital, which contains a good supply of water. During the past year a detachment of 51 men went on field service with the Political Agent, and was absent about two months; another detachment of 30 men has been kept at Drappa, where it remains pending further instructions.

The total number of admissions to hospital during the whole year amounted to 96; of these 51, or rather more than one-half, were cases of intermittent fever—a good many of the worst and most intractable cases having been sent in from the Drappa detachment. There were five cases of conjunctivitis: one of which—a very severe case—occurred on field service. There was little disease of either the respiratory or digestive systems, but there were five cases of affection of the urinary organs. Fourteen cases of contusion were admitted during the year, some of rather a serious nature and nearly all occasioned by falls or kicks from horses.

No death took place during the year, nor was there a single case of discharge or invaliding: one man went on sick leave.

H. M.'S 2ND COMPANY N.A.

RAJKOT.—In Medical Charge of Surgeon E. SEXTON; Strength 122.

The average strength of the 2nd Company N.A., including 50 muleteers, amounts to 122 native officers, non-commissioned officers, and privates. The gunners and muleteers occupy separate lines, the former occupying two sections—one with tiled roofs, the other chuppered—and the latter one section near the mule lines which is also tiled. Water is obtained from two wells, situated in close contiguity to the lines—one of which contains excellent drinking-water; the water in the other being somewhat brackish. No detachments were sent anywhere during the year, the men having arrived from Aden towards the end of March. During the year 1872 there were 111 admissions to hospital out of a total strength of 122. Of the whole number of cases admitted, 54, or nearly one-half, were suffering from febrile affections, the vast majority being of the intermittent type. Seven cases of acute and chronic rheumatism and two cases of lumbago were also admitted. There was very little ophthalmic disease among the men of this company, only one case having occurred during the year. Diseases of the ear too were rare, as were also affections of the respiratory system, only one case of pneumonia and one of bronchitis having been admitted in 1872. Diseases of the gastro-enteric system were more frequent, no less than ten figuring in the returns, five of which were cases of simple diarrhoea. There were seventeen cases of local injuries, most of which were occasioned by accident: one death of a muleteer from general paralysis, the result of an accidental injury, took place during the year.

On the whole the men of the company have had a good average of health, during the year 1872.

On arrival from Aden, there was a decided scorbutic taint to be detected in many of the older men; but the general health of the company has steadily improved ever since its arrival here, and may now be considered in a highly satisfactory condition.

H. M.'s 20TH REGIMENT N.I.

BHUJ.—In Medical Charge of Assistant Surgeon H. DE TATHAM ; Strength 630.

Europeans...	...	...	...	...	7
Natives	...	...	...	...	630

In my medical history of the regiment for last year, I gave so full a description of the cantonment of Bhuj and its environs, that to again describe the same would be superfluous. The general aspect of the camp remains the same, but certain improvements have been made, a number of additional young trees have been planted along the sides of the principal roads, culverts have been built, and the roads themselves retalalled, and put into such good order that, in that respect, the camp would now compare favourably with most up-country stations.

A few words as to the climate of Bhuj during the past year. The north wind, which prevailed at the beginning of the year, continued to blow until the end of January, when it veered round to the south-west, from which quarter the prevailing wind came for the succeeding seven or eight months up to the middle of September; but towards the end of that month, the north and north-east winds began to make themselves felt, and prevailed up to the end of the year.

During the month of April and the first week in May, south-west breeze was not so strong as is usual at that time of the year, and great heat was experienced in camp; again in the month of June, from the same cause, the heat was very trying up to the 20th of that month when the first rain fell, but from that date up to the end of the month the rainfall was nearly 5 inches and the air was cool and pleasant: the climate during the month of July, too, was most favourable, rain fell almost every day, although not always in sufficient quantity to be registered. The total rainfall during the month was about 9 inches, and a south-west breeze blew through camp night and day almost without intermission; on the 15th September, a violent thunderstorm passed over camp, it appeared to come from the north.

The following table shows the maximum and minimum temperature, the prevailing winds, and rainfall at Bhuj during the year:—

1872.					Temperature.		Prevailing Winds.	Rainfall.	
					Max.	Min.		Inches.	Cents.
January	...	...	...	...	77	60	N.	.....	.....
February	...	...	...	...	75	59	S.W.	.....	.....
March	...	...	...	...	92	70	W.	.....	.....
April	...	...	...	...	97	76	S.W.	.....	.....
May...	...	...	...	...	96	78	S.W.	.....	.....
June	...	...	...	...	94	81	S.W.	4	79
July	...	...	...	...	86	78	S.W.	8	75
August	...	...	...	...	84	77	S.W.	2	8
September	...	...	...	...	87	77	S.W.&N.	1	44
October	...	...	...	...	89	76	N.E.	.....	.....
November	...	...	...	...	88	67	N.E.	.....	.....
December	...	...	...	...	78	56	N.E.	.....	.....
Total.....								17	6

The system of conservancy, described by me on two former occasions, has been most efficiently maintained throughout the year, and appears well suited to the locality; the introduction of the Trench system of latrines at Bhuj has been mooted; but, owing to certain local and political difficulties, has not yet been carried out.

The sudder bazar is still unprovided with any latrine.

The camp generally has been kept very clean during the year; there are no immediate local causes of malaria, the hedges of the officers' compounds are kept trimmed to the regulation height, and the camp was efficiently cleared of all redundant vegetation directly after the rains had ceased.

Under this head I have nothing to add to the remarks in my last report, the supply has been both plentiful and good throughout the year

Water-Supply.

The lines are clean and are kept in a good sanitary condition, but the buildings themselves are decidedly bad; they are built on the old standard plan, and the space accorded to each man is much less than the allowance sanctioned by the Government of India, namely, 70 superficial feet for each single man, and 120 superficial feet for each family. On one occasion I measured 12 rooms, occupied by single men, and found the average superficial area of each to be about 48 square feet; the average area of the rooms occupied by families approaches nearer to the Government allowance, but in many instances is also very deficient. The huts, too, are very low, being only ten feet high in the centre, and there is no system of ventilation in the roof. The streets between the blocks of huts are wide and exposed to the influence of the wind and the rays of the sun. The lines are unprovided with any system of drainage, and, with the exception of a tree or two here and there, are utterly devoid of shade.

The quarter guard is a large and suitable building; the solitary cells, two in number, are also good, being 10 feet square and 15 feet in height; they are each provided with a small urinal, and are well ventilated. No additions to the line buildings have been made during the year.

These have been kept in a good sanitary state during the year, no additions have been made, but the following great improvement has been effected. In the month of January, when the Major-General Commanding the Northern Division of the Army inspected the regimental hospital, I called his attention to the absence of any system of ventilation in the roof, and recommended that the ridge system should be applied; my suggestion received due attention and the work was performed in the month of April. This has been a very great success, and there is now a very marked difference in the air of the hospital in the early morning, especially in the cold weather, when most of the doors and windows have been closed all night.

Two or three times during the year it has been necessary to use the cookhouse of the old artillery hospital for the treatment of cases of small-pox, and on each occasion it has been thoroughly purified and whitewashed directly the patient was discharged.

The compound of the hospital was carefully cleared of all redundant vegetation after the rains.

The hospital accommodation proved inadequate during October and November, when the daily average number of sick was 115 and 163 respectively; and many men who were still unfit for duty were consequently permitted to live in the lines. As I have on a former occasion fully described the hospital, it is not necessary to do so again, but I may mention that in the event of a recurrence of such a sickly season, I can, by making use of every available space, accommodate about 70 patients; this, of course, includes the old artillery hospital, and also fifteen beds placed in the verandah of the regimental hospital.

In the month of December, consequent on the receipt of an order to that effect from the Major-General Commanding the Northern Division, the Dry-earth system of conservancy was adopted in the hospital latrine, as it had only been in use for a week at the end of the year: any special remarks upon the system are unnecessary.

The following table shows the *increase* and *decrease* in the regiment during the year:—

Recruits joined during the year	...	...	...	...	...	38
Transferred to 20th N. I. from 21st N. I.	...	...	...	...	...	1
Invalided as unfit for further service	...	...	...	...	...	24
Deserted and struck off	...	...	...	...	...	2
Died in hospital	...	...	...	...	...	2
Died out of hospital and on leave	...	...	...	...	...	4

The new recruits were mostly from the Koncan; speaking generally, they were of good development and fair average height.

Of the men invalided, as unfit for further service, 21 were over fifteen years' service, and, therefore, entitled to pension; the causes which led to their being sent before the general Invalid Committee, were as follows:—

One subedar of 30 years' service was a constant sufferer from rheumatic pains in the loins and limbs, and was said to have sustained an apoplectic seizure while on furlough in Hindoostan a year before.

A jemadar of 35 years' service was proposed on account of loss of memory, the result of long service and advancing age, which rendered him no longer fitted for the responsible position of a company officer.

Of the non-commissioned officers and men, 13 were invalided on account of infirmities common among sepoys of long service, namely, chronic rheumatism, shortness of breath, general debility, and presbyopia. The others were as follows:—

One havildar suffered from partial contraction of the left elbow joint, the result of a severe contusion (without fracture) sustained in a fall when off duty.

Two privates were affected with leprosy, one of the "tubercular" and the other of the "anæsthetic" variety, they were neither of them incapacitated for duty, but they were both anxious to take their pension, as their position in the regiment was a very unpleasant one: their comrades of the same caste refusing to eat with or associate with them in any way.

One private had been seized with mania, which showed itself in his suddenly making a furious and unprovoked attack on the hospital orderly, whom he found sleeping outside his house, and who was under treatment for scalp wound and contusion of the face for two months afterwards.

One man had been under treatment for a long time for fissures in the skin of the feet, which refused to heal under a multiplicity of different applications, and when at last they did heal, other fissures appeared about the hands and fingers; and bullæ formed on the hands and forearms, which left unhealthy ulcers behind them.

One man had a tendency to hæmorrhoids, or rather a chronic congestion of the mucous membrane of the rectum, which was relieved by periodical discharges of blood.

Three men also were invalided on medical grounds during the year, whose length of service did not entitle them to pension: one for general debility and mental incapacity, one for dementia, and one for hernia.

The latter case was a young sepoy in whom the rupture occurred for the first time while on a parade, although in other respects a strong, healthy man; his infirmity of course rendered him unfit for the active duties of a soldier; I, therefore, represented the matter to the Commanding Officer and recommended that he should be discharged the service; my recommendation received the approval and sanction of His Excellency the Commander-in-Chief.

Of the two deaths—one in the month of March was from aneurism of the aorta, of which the signs during life were very obscure, and the other in the month of November from exhaustion consequent on repeatedly recurring ague.

The regiment has been in garrison during the whole year; it has furnished no detachments and but very few escort parties. The guard duty at Bhuj being fortunately very light, the men enjoy as a rule $7\frac{1}{2}$ consecutive nights in bed; even in November, when the average daily sick numbered 163, they had $5\frac{3}{4}$ nights in bed: the average number of consecutive nights in bed for the whole year were $6\frac{3}{4}$.

In the month of October, when the daily average number of sick was 115, and when even those men who were not in hospital were many of them weak and debilitated from recent attacks of ague, parades were temporarily suspended, in consequence of a verbal recommendation made by me to the Commanding Officer to that effect.

In the month of November, when the daily average number of sick was 163, I addressed a letter to the Adjutant of my regiment, suggesting for the consideration of the Commandant the advisability of postponing *sine die* the annual course of running drill, which, under ordinary circumstances, would have commenced on the 15th of that month; as from the great prevalence of fever among the men, I considered that their *physique* was decidedly below par, and the regiment as a body quite unequal to the exertion.

My suggestion received due attention and running drill had not commenced up to the end of the year.

Sickness.

The following table shows at a glance the admissions into hospital during the year, and their causes:—

[Table.

Table.

1872.	Average strength.	Total admissions.	Average daily sick.	Ague.	Dengue.	Small-pox.	Rheumatism—sub-acute and chronic.	Syphilis.		Phthisis.	Scurvy.	Apoplexy.	Paralysis.	Disorders of the intellect.	Bronchitis and pneumonia.	Pleurisy.	Dysentery.	Diarrhoea.	Diseases of spleen.	Gonorrhoea.	Gnueaworm.	Debility.	Contusions and local injuries.	Eye affections.	All other causes.	PREVAILING DISEASES.
								Primary.	Secondary.																	
January	615	36	28	8	..	..	5	..	..	..	..	..	..	..	2	..	2	1	..	..	..	..	8	..	10	Ague and rheumatism.
February	611	34	25	4	..	1	4	..	..	4	..	..	2	..	..	1	1	2	..	..	..	..	4	..	11	Ague and rheumatism.
March	613	24	22	2	..	..	1	..	..	..	..	..	..	1	1	..	3	1	..	..	..	..	6	..	9	Rheumatism and diarrhoea.
April	608	29	23	3	..	..	..	..	..	..	2	..	..	..	2	..	1	4	..	..	..	1	6	..	12	None.
May	658	29	28	2	..	2	..	..	..	..	2	..	..	..	1	..	2	3	..	..	..	1	7	1	8	None.
June	644	28	23 6	2	..	..	3	1	..	..	..	1	..	..	..	..	..	2	..	..	..	..	8	..	8	None.
July	644	20	21	3	..	..	2	..	..	..	1	..	..	..	2	..	..	..	..	..	..	..	3	..	7	None.
August	645	53	32 4	13	..	..	5	..	..	..	1	..	..	..	1	..	2	7	..	..	..	..	11	2	11	Ague and diarrhoea.
September	640	170	69 1	126	11	..	..	..	..	..	..	..	..	1	1	..	2	3	1	..	..	..	4	6	15	Ague.
October	610	223	115 3	197	..	..	1	..	..	..	..	..	..	..	..	..	1	2	..	1	..	..	7	3	11	Ague.
November	634	187	163 7	140	..	..	3	..	2	..	5	..	1	..	5	..	1	2	2	..	1	2	7	2	14	Ague.
December	634	90	93	59	..	..	4	..	..	..	..	..	..	..	1	1	2	2	1	..	..	2	13	..	5	Ague.
Total	630	923	53 7	559	11	3	28	1	2	..	13	1	3	2	16	2	17	31	4	1	1	6	84	17	122	

The regiment enjoyed excellent health during the first eight months of the year; ague furnished only 37 admissions during that period, the daily average number of sick being only 25; but I regret to say that, during the last four months of the year, ague prevailed to an extent unprecedented in the memory of any officer or man in the regiment; no fewer than 522 cases of the disease were admitted during that period; and the fever, although not fatal, was of a very prostrating type, and left the men exceedingly feeble and shattered in health for along afterwards.

In the month of October alone the total admissions were 223, of which 197 were due to ague, and the daily average number of sick was 115·3; but these numbers alone give no idea of the state of inefficiency to which the regiment was temporarily reduced, as a number of men who were not sick themselves were granted leave for the purpose of attending their wives and children, many of whom were also fever-stricken; and even those men who had been discharged from hospital were so weak that parades were altogether out of the question.

In the month of November the admissions from ague were fewer, being 140 only, but the daily average number of sick was much higher, being 163·7; this was owing to the reduced state of the men, most of whom had been in hospital *twice*, and some of them *four times*, during the previous 3 months; and their convalescence was so slow and tedious, that I was obliged to keep them a long time in hospital after the fever had ceased to recur.

In December the health of the regiment began to improve, the sick list on the 1st of the month being 159, and on the 31st only 48: the number of ague cases admitted during the month were 59, of which 34 occurred during the first half of the month.

During the early part of the month of October when my supply of quinine was limited, I treated many of the cases with arsenic, bebeerine, solution of quinioidine, and such other drugs possessed of antiperiodic virtue as I happened to have in store; and when these were all expended (except a very small supply of quinine which I kept in reserve for special cases), I was obliged to fall back upon kroat and decoction of nibbark, (made every morning according to the directions in the Indian Pharmacopeia—the bark being obtained from a tree in the hospital compound); with these latter many cases recovered and were discharged, but the proportion of *re-admissions* from among them was very discouraging. I afterwards adopted the hypodermic injection of quinine; my first attempts were made with a solution, containing 3 grains of quinine in 20 minims of water, with a sufficiency of tartaric acid; I found that this had the desired effect upon the fever, but in two cases (out of eleven) it resulted in abscess, and in all the others the pains and swelling at the seat of puncture were such that the men remained longer on the sick list than they would otherwise have done. I next employed a solution recommended by Dr. Tuson, of the Bengal Army, in the *Indian Medical Gazette*, namely, 3 grains of quinine and 6 grains of citric acid in 20 minims of water; I injected some cases with this solution and it prevented the recurrence of the fever; but finding that many of the men suffered from great pain, heat, and swelling at the seat of puncture, I cast about for a new solvent for the quinine, and at last I hit upon dilute phosphoric acid of the British Pharmacopeia. I found that 20 minims of this acid holding 5 grains of quinine in solution formed a most efficient injection, one operation being in most cases sufficient to prevent a recurrence of the fever; I employed this solution in more than 100 cases, and the results, with respect to the fever, were *most encouraging*; but I am bound to admit that I was obliged to keep many men on the convalescent list long after they were cured of their fever, in consequence of stiffness in the left arm, which prevented them from holding a musket: there were, however, *no cases of abscess or ulceration*, and, I think, that the proportion of stiff arms, resulting from the employment of this solution, was on the whole *less* than from the citric or tartaric acid solutions. In the absence of the soluble sulphate, I do not think there is a better solvent for the disulphate than dilute phosphoric acid of British Pharmacopœial strength, half an ounce of which takes up one drachm of quinine. At first I selected the left arm for operation, but subsequent experience taught me that it is better to inject the right arm in *naiques* and *sepoys*, and the left in *havildars*, *buglers*, and *musicians*, as being less likely to incapacitate them afterwards. On the 23rd November, the extra supply of medicines which I had indented for having arrived, I suspended operations and re-commenced the administration of quinine by the mouth, to the great satisfaction of my patients, who showed much repugnance to the method of treatment by injection, although, I will do them the justice to say, they submitted themselves cheerfully to it as long as there was any occasion for economizing my supply of quinine. I afterwards obtained a small supply of the soluble sulphate of quinine from Bombay and used it in a few cases; but I have not had sufficient experience with it to justify the expression of any opinion as to its superiority over the disulphate. My opinion, with regard to the hypodermic injection of quinine, drawn from the experience above related, is that the drug when administered subcutaneously *is more certain in its action*, but in some cases the pain and swelling at the seat of puncture is such that the man is not able to use his arm for sometime afterwards, while in others the local effect of the operation is very slight and soon passes away.

Many of the cases of ague had enlargement of the spleen, which kept them for some time on the convalescent list, and some of them had still enlarged spleens when they returned to their duty.

Another notable feature in the health of the regiment during the year was the occurrence, during the month of September, of 11 cases of dengue. During the month of August and the first part of September, hearing that the disease had appeared in the province (said to have been imported into Mandavi from Jamnagar), I was very careful in watching the cases of ague admitted in order to detect it at once if it should occur; but it was not until the 13th of the latter month that anything like it appeared, although a great number of cases were reported to have occurred in the city and in the country round. On the 13th and 14th eleven men were admitted with pyrexia, frontal headache, pain and stiffness in the limbs, &c., but *no swelling of the joints*. I found that the fever was a continued one, and that the cases presented the features of dengue, as described in recent literature on the subject. Nine of them recovered and were discharged by the end of the month, and the other two remained under treatment for sometime for stiffness of the knee-joint: there was only one case in which I could detect anything like an eruption, and in that a scarlet efflorescence appeared on the palms of the hands, succeeded by desquamation of the cuticle, which latter was also observed on the back of the neck, ears, and breast. I treated them with saline mixture and opium: in 3 cases I employed tincture of belladonna in 10 minim doses, four times a day, as recommended by Dr. Charles of Calcutta; they afterwards had tonics, &c. On the 15th of the month, a violent thunderstorm passed over camp, from the north, and after that date no case in the least resembling dengue presented itself at the regimental hospital, although it was said to prevail in the city all through the month of October. I am, however, rather sceptical on this point, and I am inclined to think that many of the cases pronounced to be dengue, would, under constant and effective supervision, have been registered as ague.

Three cases of *small-pox* occurred in the regiment during the year: one in February—a musician who was vaccinated in infancy; he made a good recovery—and two in May, from among a batch of recruits from the Koncan, who had only arrived in camp a few days before, and must, therefore, have brought the infection with them. Both had been vaccinated in infancy and both made good recoveries. One of these recruits, too, whose marks of previous vaccination were not very distinct, had been *re-vaccinated* four days only before the eruption of small-pox appeared; the disease ran its usual course, and the vaccination did not take and appeared to have no influence in modifying the attack.

In addition to these, 2 other cases occurred in camp: one in April—a recruit boy who had been vaccinated in infancy, and re-vaccinated at Deesa two years previous to the attack; he made a good recovery—and one in December, an officer's servant, who had only been four days in camp having just arrived from Bombay, and who, of course, brought the infection with him. All the above cases were treated with quinine and iron mixture, from the beginning, and plenty of good food insisted on: a mixture of one part of carbolic acid to four of boiled linseed oil, was also freely used to anoint the bodies, limbs, and faces of the patients; this has the effect of destroying the factor peculiar to the disease, and, of course, diminishes the risk of infection to others.

The patients too liked the application and expressed themselves as relieved thereby.

The regiment has been very free from venereal disease during the year: one case of primary, and two of secondary syphilis, being the only representatives of the *class*.

Cholera. No cases of cholera occurred during the year.

Scurvy has furnished 13 admissions during the year, and a very large number of men in hospital for other affections have also suffered from the disease. I find that when the disease is accompanied with swelling and infiltration in the calves of the legs, treatment at Bhuj is worse than useless, as it only wastes valuable time which might be better employed in sending the man to his native country, which, in the end, is the course I invariably have to adopt.

Seventeen cases of dysentery were treated during the year: in their treatment I, for the most part, administered a pill, containing 10 or 15 grains of ipecacuanha with extract of gentian, and repeated this every morning, when necessary, or until the motions began to assume a faecal character, when a pill containing 5 grains of ipecacuanha and 1 grain of opium once or twice a day, and subsequently tonics, completed the cure.

Diarrhœa. Thirty-one cases of diarrhœa were admitted, they all yielded to the usual treatment.

One case of guinea-worm was admitted in November, and remained in hospital at the end of the year; the man was a recruit, in a very bad state of health; he had *two* of the parasites, one in the thigh and one among the tendons round the ankle-joint—abscesses formed in both places, and the patient was still suffering much at the end of the year. In another case of guinea-worm which came under

my notice—an officer's servant—I was more fortunate; feeling the worm under the skin of the leg, I cut down upon it, raised the animal with a probe, and succeeded in extracting a *live guinea-worm*, fourteen inches in length, *at one sitting*.

Eye-affections have furnished 17 admissions during the year: these were all cases of Conjunctivitis. conjunctivitis, and all recovered under the usual treatment.

Bronchitis and pneumonia give 16 admissions for the year; these all did well, except two cases of bronchitis, in whom after the acute symptoms had subsided, a very obstinate form of chronic bronchitis supervened; Bronchitis and pneumonia. they both remained under treatment at the end of the year.

Capital operations. Capital operations have been performed during the year.

One man was admitted with phymosis for which I circumcised him, and he made a good recovery. A recruit boy, suffering from the same complaint, was subjected to the same operation, and with a similar result.

Phymosis.

The average daily sick for the whole year was 53·7. The proportion of sick to strength was 8·5 per cent., and the proportions of admissions to per cent. of strength was 146·5.

Twenty men were invalided to their own country during the year, for change of climate, and two were sent for change of air to Moondra in Kutch, during their convalescence from small-pox and scurvy, respectively.

There were five admissions into sick quarters among the European officers during the year: one for laryngeal catarrh—one (who has since proceeded to England on medical certificate) was in sick quarters three times, for dyspepsia, febricula, and contusion of the head, respectively; and one officer was placed in sick quarters for hæmorrhoids on the last day of the year.

I was obliged to suspend vaccination during the last 3 months of the year in consequence of great sickness in the regiment, but during the first nine months of the year it was regularly practised. 25 primary vaccinations were performed successfully, and out of 38 *re-vaccinations* among the recruit boys, new recruits, and others in the lines, 25 were successful; these *all* presented marks of previous vaccination. Their ages ranged from 10 to 20.

Two difficult labours occurred in the lines during the year. One was a case of cross-birth

Child-birth. in which the arm had been born for 6 or 7 hours, and the funis was prolapsed; from the condition of the latter I ascertained that the child was dead. After some trouble (the liquor amni having escaped) I succeeded in turning the child, and so delivering the mother, who made a good recovery.

In the other case the head of the child was so large that it could not pass, and from the strong contraction of the uterus, and the liquor amni having escaped, turning was impossible; the child being *already dead*, I decided upon perforating its head and so relieving the mother: this was done, and she made a good recovery.

H. M.'s 2ND REGIMENT BOMBAY LIGHT CAVALRY.

DEESA.—In Medical Charge of Assistant Surgeon A. BARRY, M.D.

Average strength at head-quarters—

Europeans.....	6
Natives.....	301

Squadron at Rajkot.

Strength. {	Europeans.....	1
	Natives	151

The head-quarters of the regiment have been stationed at Deesa throughout the year. Since our arrival here on the 24th of January 1871, attempts have been made to improve the general appearance and sanitary condition of the cantonment. During the year seven fixed receptacles for rubbish have been constructed in the sudder and regimental bazars. With a view to prevent malaria, it has been determined to cultivate ground, especially in close proximity to the European barracks, the growth of grass and cereals to be fostered for the purpose of absorbing and rendering inert miasm, and utilizing decayed vegetable matter in the soil after the rains.

2. The road from the sudder bazar towards the artillery lines has been improved, and a new culvert constructed over a nullah, which separates the former from the latter, and on the roadsides young trees are planted, which are carefully watered morning and evening. Already those lining the road which leads from the European infantry lines to sudder bazar, planted three or four years ago, form a fine avenue and give a pleasing prospect of affording a grateful shade and lessening the reflection of light and radiation of heat from the sand.

3. Wells in low places are being disused; all animal and vegetable matter are carefully swept from the streets of the bazar, and human excreta deposited in the enclosures made for

the purpose, in the bed of the Bunass. Thus, something has been effected to ameliorate the condition of the inhabitants; but, although the conservancy has been improved, yet, contrasted Health of civil population. with last year, the health of the civil population has been very bad. From January till May, an epidemic of discrete small-pox prevailed, but the ratio of deaths was very small. By the end of June the pandemic wave of dengue reached Deesa, and upwards of 95 per centum of all inhabitants were sufferers. No deaths resulted. When dengue had all but disappeared, in September and October a low adynamic fever, of the remittent type, raged for many days; upwards of 10 deaths per diem were reported. Total deaths amounted to 393, and, estimating the population at 9,000, this shows a deathrate of 43·6 per thousand. Males suffered much more from bowel complaint than females. There were 21 deaths of the former and 9 of the latter. One old man died from the effects of snake-bite. I subjoin a statement showing the mortality in the bazars during the year:—

STATEMENT showing the Mortality in the Sudder and Regimental Bazars, Deesa, during the year 1872.

	Cholera.		Small-pox.		Ague and Remittent Fevers.		Bowel Affections.		Accident or Violence.		Snakebite.		All other Causes.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
January.....	4	1	15	10	1	2	...	...	...	...	1	2
February.....	2	1	2	...	...	...	...	...	...	...
March.....	6	3	4	1	...	...	...	...	1	2
April.....	1	...	11	6	1	1	...	...	...	...	2	2
May.....	6	8	3	...	...	...	...	...	...	1
June.....	4	2	4	1	...	...	...	...	...	1
July.....	4	4	...	...	1	...	1	...	...	2
August.....	8	10	1	...	...	...	...	...	1	...
September.....	17	11	3	2	1	...	...	...	2	3
October.....	37	53	1	1	...	...	...	...	1	...
November.....	35	45	1	...	...	...	...	...	1	1
December.....	19	14	...	1	...	...	...	...	...	...
Total.....	5	1	164	167	21	9	2	...	1	...	9	14

4. During January the cold was severe, the thermometer standing as low as 40°8 F.; in February the lowest temperature was 44° F. Up till the beginning of March the air was bracing and exhilarating: the hot season began by the middle of March and lasted till the middle of June. In May the heat was very great, and the highest temperature prevailed, the thermometer indicating 115° F. in the shade. The prevailing winds were from the S.S.W. and S.W. No rain fell.

5. Blinding dust and sandstorms were frequent towards evening. At nightfall there was often a lull in the breeze from the S.W., and occasionally not a breath of air was felt, and the atmosphere became oppressive and stagnant. The nights were hot and sultry, and refreshing sleep could only be obtained towards morning.

6. Miasmatic diseases are always at a minimum during the hot season.

7. The periodical rains began in the middle of June, and fell nine days only during this month, aggregating 2·14 inches: the highest temperature was 113° F., which the rain reduced to 77°·1 F.

8. July and August were cool, owing to the rain which fell 18 days during the former and 21 days in the latter, and the total rainfall during the above two months was 22 inches.

9. September and October were hot and sultry, and frequently the atmosphere was charged with electricity.

10. November and December were cold—lowest temperature in the former 47° F., in the latter 43° F. No rain fell during the last three months of the year.

11. During the year the mean monthly range was 41°·2 F.; mean daily range 26° F.

12. The mean of the barometer readings for the year was 29·516 inches: the barometric range was small, the mean monthly range being ·105 inches. Rain fell on 54 days, and the total for the year amounted to 24·344 inches. Highest temperature 115°·4 F.—lowest 40°·8 F.

13. The following are the meteorological observations taken at Deesa Observatory during the year, viz.:—

Meteorological Observations during the year 1872, noticing the pressure on the atmosphere, the temperature and humidity of the air, the fall of rain, the amount of ozone and cloud, the prevailing winds, and the variations in the weather.

YEAR AND MONTH.	Reading of Barometer, No.				Temperature of Air.						Dry and Wet Bulb.		Mean deduced dew point.		Mean degree of humidity.		Rain.		Ozone.		Wind.		Cloud.	
	in.	Highest in month.	Lowest in month.	in.	Range.	Highest in month.	Lowest in month.	Range in month.	Mean of all highest.	Mean of all lowest.	Mean daily range.	Approximate mean for month.	Mean of dry bulb.	Mean of wet bulb.	Mean deduced dew point.	Mean degree of humidity.	Number of days it fell.	Amount collected.	Mean at h. a.m.	Mean at h. p.m.	General directions.	Estimated strength.	A.M. 0—10.	P.M. 0—10.
January	29.722	29.879	29.553	1.05	in.	89.4	40.8	48.6	79.5	48.7	30.8	64.1	71.2	64.3	45.0	.424	...	in.	...	...	N.E.	.3	.2	.2
February ...	.688	.832	.553	1.02		96.0	44.0	52.0	85.3	51.5	33.8	68.4	77.1	55.0	43.6	.336	...	...	...	...	N.W.	.2	.1	.1
March .....	.608	.760	.438	1.12		105.8	52.1	53.7	96.3	64.6	31.7	80.7	88.7	64.6	52.6	.328	...	...	...	...	W.N.W.	.2	.2	.2
April .....	.498	.672	.351	1.32		107.4	63.2	44.2	101.9	73.2	28.7	87.6	94.4	68.5	55.7	.302	1	.008	...	...	N.W.W.	.3	.2	.3
May .....	.416	.592	.291	1.17		115.4	71.1	44.3	107.1	79.0	28.1	93.1	97.6	74.0	62.3	.359	...	...	...	...	S.S.W.	.3	.1	.1
June .....	.285	.427	.077	.091		113.5	77.1	36.4	104.2	83.3	20.9	93.8	95.5	78.9	70.5	.504	9	2.142	...	...	S.W.	.2	.4	.4
July .....	.262	.438	.083	.079		102.5	76.1	26.4	91.2	79.4	11.8	85.3	85.4	78.1	74.5	.727	18	11.276	...	...	S.W.	.3	.8	.8
August .....	.310	.537	.208	.090		91.7	74.1	17.6	87.3	77.2	10.1	82.3	82.6	77.4	74.8	.788	21	10.528	...	...	S.S.W.	.2	.8	.8
September ...	.449	.588	.156	.108		100.1	68.9	31.2	92.4	75.8	16.6	84.1	86.4	76.6	71.7	.643	5	.390	...	...	S.W.	.2	.4	.5
October .....	.592	.777	.418	.103		98.7	55.0	43.7	95.8	65.0	30.8	80.4	88.4	68.9	59.2	.407	...	...	...	...	N.E.	.2	.1	.1
November ...	.677	.808	.533	.110		96.7	47.0	49.7	91.8	56.5	35.3	74.2	83.6	62.7	52.2	.368	...	...	...	...	S.S.E.	.2	.1	.2
December ...	.680	.852	.513	.108		90.0	43.1	46.9	86.6	53.6	33.0	70.1	77.7	60.6	52.0	.441	...	...	...	...	E.S.S.	.2	.2	.2
Mean	29.516	29.675	29.346	1.05		100.6	59.4	41.2	71.6	68.5	26.0	80.3	85.7	68.3	59.5	.469	54	24.344	...	...	...	.23	.30	.33

Deesa Observatory.
(Hospital Compound) European Infantry Lines.

Localities at which observations were made.

14. As regards the geology, topography, and natural productions of Deesa and surrounding country, reference may be made to my annual report for 1871.

15. The season of 1872 has been favourable, and the supply of grass and cereals ample; but there was considerable difficulty in procuring cattle and sheep during the latter part of the hot season and rains. The commissariat supplies large quantities of lucerne grass. Charsilia and guinea grass are also cultivated, and afford excellent food for cattle during the hot season, when all vegetation disappears from the ground.

16. The following are the principal endemic diseases prevalent among the natives of the country around Deesa, enumerated in the order of their frequency, viz.,
 Medical Topography. ague, small-pox, conjunctivitis, purulent ophthalmia, rheumatism, bowel complaints, venereal disease, guinea-worm, strumous affections; cataract, fungus foot, calculus vesicæ, and cancer in various forms.

17. During March and April I amputated a number of legs for fungus disease of foot, by long anterior and short posterior flaps, and they all terminated successfully under Lister's carbolic-acid treatment.

18. Two hard senile cataracts were extracted by me by the scoop-method, making the incision at the junction of the sclerotic and cornea: the spoon used was Critchett's. One case was successful. A boy's upper arm, which had been crushed by the wheel of a heavily-laden cart passing over it, was amputated at the junction of the upper and middle thirds of the humerus. The parts healed kindly, and he was discharged from the hospital in excellent health twenty-one days after the operation.

19. During January the average strength of the regiment at Deesa was 58, the first squadron being at Rajkot, and the 2nd and 3rd squadrons at Bhuj, whither they marched to be present at state ceremonies. Their encamping-ground there was badly situated—low-lying, and poorly sheltered—composed entirely of sand, with the thermometer frequently standing below 50° F. Their drinking-water was obtained from a well which had been in disuse, and, consequently, the sowars suffered considerably from colds, bowel complaints, and rheumatism. They remained at Bhuj four weeks, and marched on Deesa on the 26th of January, and reached camp on the 8th of February.

20. On the line of march they suffered from ephemeral fever, ague, bronchitis, and, occasionally, dysentery and colic.

21. Throughout the month of February the total admissions into hospital were 28, and the chief causes in the order of frequency were ague, boils, and contusions. A sowar who had been ninety-four days fourteen hours in hospital, died from the effects of chronic rheumatism, complicated with pericarditis and hydrothorax. The autopsy showed great effusion into the pleural cavities, the lungs being compressed to a third of their natural size, and the substance being dense and inelastic.

22. During March the admissions were 31, showing an increase of 22 when contrasted with those of March 1871. The causes were nearly the same as last month. There were two deaths—one from acute pneumonia consequent upon ague. Every effort was made to check the inflammation, but without success, in consequence of the rapid hepatization of the lungs, and great prostration and debility of the patient.

23. The other was an old duffadar of excellent character—30 years' service—who was admitted with severe remittent fever, with acute head symptoms. Leeches and blisters were applied to the head, quinine given by the mouth and hypodermically, purgatives and enemata were administered, yet he succumbed after an illness of thirteen days' duration.

24. In April 25 men were admitted into hospital, and the principal causes were ague, affections of the eye, and contusions, and were, generally, amenable to treatment.

25. *Discrete small-pox* was prevalent among the children of the regiment early in the month, and by the 26th it considerably abated.

26. After amputating a leg for fungus disease of the foot, I accidentally pricked my right thumb with a needle while stitching the flaps, the result of which proved to be a poisoned wound. After 10 days' incubation, the thumb became swollen with pain so acute and intense, as to banish all sleep for five days and four nights. I took 20 grains of chloral-hydrate without effect; and half an hour afterwards took a second dose of 35 grains without producing sleep, though I dozed a little. It caused very violent headache with slight wandering and incoherent speech. Thus 55 grains of chloral failed to induce sleep in the face of the pain which I suffered, which goes to shew that intense agony will prevent the action of this anodyne and hypnotic; and this coincides with the observations of Dr. A. Maxwell Adams, 2nd Royal Lanark Militia, who, in Braithwait's Retrospect, Vol. 62, page 368 of 1870, observes: "Chloral, as a general rule, will not alleviate severe and persistent pain; where it fails to induce sleep,

its anodyne and hypnotic action being in a great measure dependent the one upon the other. Where the functions of the brain are intact, and the dose is a medicinal one, the hypnotic action of chloral is rarely so profound as to destroy all feeling, or means of communication from without." Thus intense pain will suspend the action of a safe dose of chloral. Free incisions (five in all) were made on the thumb; and the pus under the microscope showed branched bodies like the mycelium of *mucor subtilissimus*. Great swelling of the lymphatics, and eruption of pustules on the forehead and of boils on the back and thighs, showed the blood to have been poisoned. The disease yielded to the free incisions, not fomentations, and to the internal administrations of tincture ferri and chlorate of potass after twenty-seven days' suffering.

27. During May and June the total admissions into hospital were 33, showing a considerable diminution compared with the previous months.

28. During five days in June there were no patients in or out of hospital. A few of the sowars who recently arrived from Rajkot suffered from a very tenacious form of remittent fever. Liquor arsenicalis was administered in five minim doses, three times daily, always after meals, gradually diminishing the dose, with benefit.

29. *Dengue*.—On July 16th three sowars were attacked by dengue, and by the end of the month 38 similar cases were treated.

30. A few of the European officers suffered from obstinate boils.

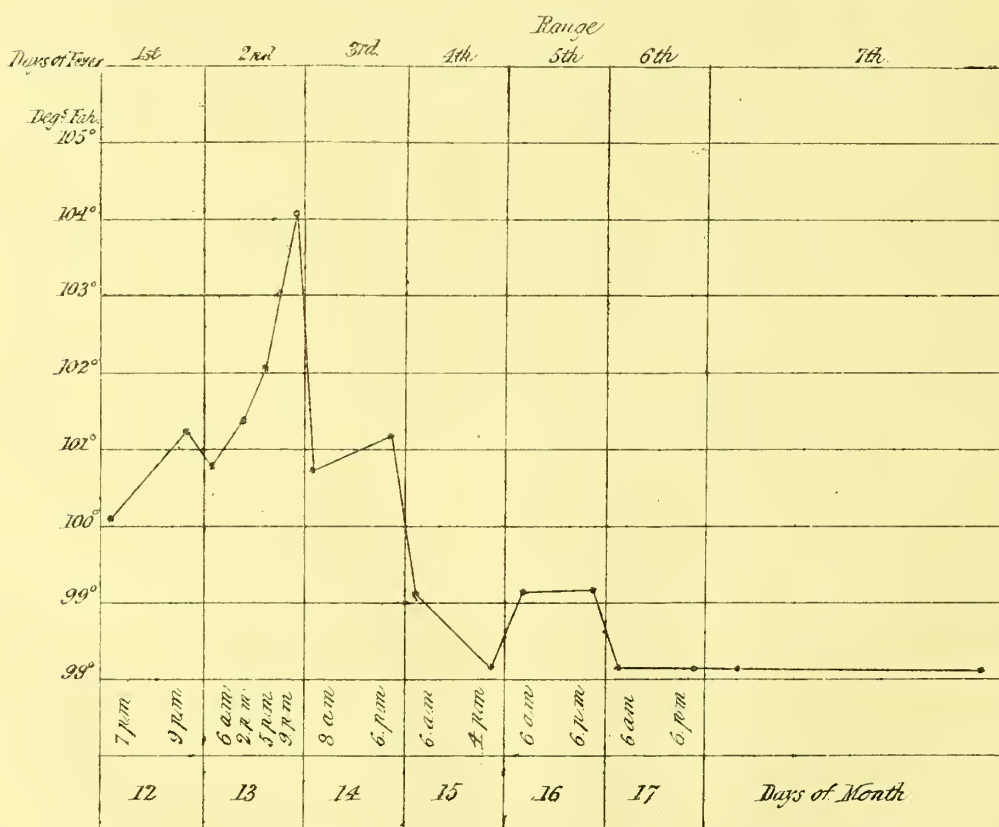
31. During August 142 admissions were registered, of which 129 were cases of dengue, seven of the latter were re-admissions from relapse.

32. The advent of dengue is almost invariably marked by the patient being suddenly seized with pain in the metacarpo-phalangeal joints, or over the instep, greatly aggravated by the slightest motion. Patient complains of lassitude, headache, pyrexia and general *malaise*. The rash usually appeared in Europeans, within 12 hours of first indisposition.

33. In many cases the pyrexia and articular pains were intense, and the slightest flexion of a joint caused excruciating pain. As a rule, the severe fever subsided in three or four days, but the sequelæ were stiffness and pains, chiefly in the wrist and ankle-joints, which frequently prevented the men from walking for weeks.

34. Three officers and three ladies of the regiment were sufferers from the affection.

35. The following is the temperature in a case of dengue of average severity :—



36. The pyrexia ceased entirely by the end of the fourth day, but on the fifth there was slight elevation of temperature coincident with the terminal rash.

37. Treatment: diaphoretics, diuretics: belladonna ten minims every hour for the first four hours; this did not alleviate the pain, but seemed to lessen the irritability and sooth the restlessness. Chlorate, carbonate and nitrate of potass, and iodide of potassium were freely given.

38. By the beginning of September dengue had nearly disappeared—only four cases were admitted into hospital: fourteen sowars were treated for rheumatism.

39. October was the most malarious month throughout the year. Total admissions were 136, showing an excess of 123 when contrasted with those of 1871. The fever was of remittent form, and characterized by great debility, and was not very amenable to treatment. Two grains of quinine, every two hours, with a little blue pill and rhubarb every alternate day, and liquor arsenicalis, were administered; and in very severe cases half an ounce of arrack was given every three hours.

40. In November 43 admissions were registered against 136 of the previous month, and an increase of 29 when compared with November 1871.

41. A sowar was admitted in a comatose condition with very severe remittent fever; temperature in axilla $104^{\circ}2$ —pulse weak, 130° . His head was immediately shaved, and a mustard poultice applied for one hour; a turpentine enema was given, and in a short time he was aroused, and for six hours he could talk to his comrades. Next day, however, a relapse occurred, when a blister was applied all over head and nape of neck. Quinine was freely given, and injected hypodermically. After an illness of two days and six hours he died.

42. Lieutenant W. H. D. Jones, who was placed in the sick list on 9th September with dracunculi over the instep and ankle-joint of right foot, was discharged cured on 24th November.

43. The following trick, which was played on Lieutenant Jones, I shall relate, in order that others may be on their guard in similar cases.

44. Being anxious to get rid of the guinea-worms at once, and hearing that an itinerant native hakeem, famous for extracting dracunculi, had arrived in camp, Lieutenant Jones desired him to see the foot. On examining the parts the hakeem said he could easily extract the worms. I permitted the native to cut down upon a whip-cord like swelling, which could be traced from the point where the worm had made its appearance, three inches backwards to the spot where it disappeared in the deep structures. Having extracted a loop of a worm, he severed it from the parts with a knife, and applied a horn to the wound. He sucked the horn with great force, and in the course of ten minutes removed it from the parts, when a large coagulum of blood was seen, in the midst of which a convoluted guinea-worm was discovered. The tail was apparent and the parasite was fresh and well preserved.

45. He repeated the application of the horn on the dorsum of the foot, and, in the clot, a second worm was seen.

46. The hakeem applied native medicines, and on the second day suddenly disappeared, not, however, until he had obtained a handsome fee. The suction over the parts did not pain Lieutenant Jones much, but slight inflammation was set up.

47. On the fourth day the parasites made their appearance in the foot as usual. The worms were evolved by me in two months. Considerable stiffness resulted, but by gentle flexion and extension of the foot on the leg, the patient was able to walk as well as ever.

48. In December there was great decrease of malarial disease—only 14 admissions.

49. The average strength of the regiment at head-quarters was 301. The admissions into hospital amounted to 634, and the deaths to 4, being in the ratio of 2,106.3 and 13.28 per one thousand of mean strength. The admissions were rather more than three times those of 1871. The mortality nearly equal. The following table shows the admissions and deaths in a classified form:—

Table.

2nd Light Cavalry.					Strength 301.		Annual Ratio per 1,000 of Mean Strength.			
Diseases.					Admitted.	Died.	1872.		1871.	
							Admitted.	Died.	Admitted.	Died.
<i>General Disease.</i>										
A. ...	...	...	...	...	469	2	1,558·13	6·644	29·09	3·64
B. ...	...	...	...	...	32	1	106·31	3·32	54·54	...
<i>Local Disease.</i>										
Affections of eye...					30	...	99·66	...	69·09	...
Circulatory system					3	...	9·96	...	...	...
Respiratory „					7	1	23·25	3·32	18·18	3·64
Digestive „					21	...	69·76	...	72·12	3·64
Urinary „					3	...	9·96	...	18·18	...
Cellular tissue					23	...	76·44	...	21·81	...
Integumentary					7	...	23·25	...	32·72	...
Local injuries					39	...	129·56	...	109·09	...
<i>Human Parasites.—Class A.</i>										
Cælemintha					...	...	...	...	7·27	...
Total					634	4	2,106·28	...	...	...

50.	Total admissions from ague	...	...	...	...	261
	Do. do. remittent fever	..	...	...	...	2
	Do. do. dengue	...	...	...	...	204
	Daily average number of sick	...	...	...	...	15·2
	Percentage of { Treated to strength	...	...	...	...	211·9
	Deaths to strength	...	...	...	...	1·3
	Deaths to treated	...	...	...	...	0·6
	Deaths out of hospital	...	...	...	...	none
	Invalided in whole regiment	...	...	...	...	5
	Proceeded on sick leave	...	...	...	...	4

51. The sanitary state of the lines is well attended to. The enclosures in front of the married men's apartments, which were composed of tatties, have been replaced by brick and mud walls. The water-supply, which is obtained from three wells in the cavalry camp, is of good quality and the supply ample.

Cavalry latrines. 54. The latrines are in a satisfactory condition, care being paid to cleanness and regularity in emptying the pans.

52. A few improvements have been effected on the hospital during the year. Two windows have been added to the building—one in each gable end, about 8 feet from the floor. Two new ventilators have been placed on the roof, and a series of new pillars have been built to support the verandah, which was in a bad state of repair after the rains. The roof was retiled. A site has been selected for quarters for the 1st class hospital servants.

53. In December the Dry-earth system was introduced into the hospital latrines, in compliance with a Divisional Order from Sir E. Russell; but as sand was supplied—no earth can be obtained within the limits of camp—I don't consider any benefit will accrue from the measure.

- Vaccination.

54. Vaccination has been successfully effected throughout the year.
- Cholera.

55. No cholera in regiment or cantonment during the last three years ; last epidemic in 1869, when fifteen of the civil population died of the disease.
56. No European officer obtained sick leave during 1872.

H. M.'s 24TH REGIMENT N.I.

DEESA.—In Medical Charge of Surgeon P. W. COCKELL ; Strength 619.

Months.	Strength.	Average Number of Daily Sick.	Thermometer.		Rain.	
			Max.	Mim.	I.	C.
			°	°		
January 1872	614	22·5	80	45	...	...
February "	604	21·6	85	47	...	...
March "	618	18·7	99	65	...	...
April "	641	20·1	102	72	...	...
May "	592	20·8	108	80	...	...
June "	649	10·3	100	82	1	93
July "	622	31·	99	60	11	15
August "	625	147·9	86	78	10	78
September "	624	53·6	95	80	...	6
October "	595	162·9	92	62	...	...
November "	623	85·9	89	54	...	...
December "	628	34·8	86	50	...	...
					23	92

From the foregoing it may be concluded that the first half of the year was the most healthy, and the sickness began with the rainfall. For the month of June only, 10 were daily in hospital—two inches of rain only fell ; but the rainfall next month was 11 inches, and the temperature decreased 10 degrees, the minimum being 20 degrees below that of the month before. This month also—July—the daily average of sick increased threefold, showing, I think, that there is some cause for disease appearing in the rains.

In September the average daily sick was 53—two-thirds less than in the previous month—but that in October, when the difference in temperature ranged 30 degrees between the mornings and afternoons, the average daily sick again increased to 162, the highest average for the year. At that time not only the hospital but 13 doubled poled tents were full of fever cases, beside line sick and women and children in the lines. In fact, this second attack of fever, coming so closely upon the dengue, has weakened the regiment so much, that I consider nothing but removal to a more bracing climate, near the seashore, will render it efficient, as the usual sequelæ of these diseases are now making their appearances, namely, chest affections (bronchitis and pneumonia). The number of daily sick has been decreasing the last two months to 85 in November and 34 in December, the present month. The number invalided during the year 29, gone on sick leave 24 ; 12 men died, and one European officer in Deesa, and four men on sick leave and furlough.

The average strength of the regiment has been 619

Daily average number of sick 52

Number of children vaccinated during the year 47

The lines of the 24th Native N. I. are in the same condition as last reported.

The water-supply of Deesa is known to be good, although I have had no opportunity of testing it ; but the absence of cholera and typhoid fever from the station is a pretty good natural test. For though, I believe, the origin of cholera is in the impregnated air, yet bad water would certainly increase it. The soil of Deesa is favourable, being sandy and of that description known to geologists as green sand. It forms a capital natural filter. We are about to introduce the Dry-earth system into the native hospitals, and I shall be able to report upon it next quarter.

The 24th Hospital has been lately enlarged to accommodate 50 beds ; and new first class servants' quarters and partly second class ones built. These quarters, however, are built

chiefly of unbaked bricks, and sand is used instead of chunam for mortar ; and the Executive Engineer believes that they will tumble down in the next rains : the wall of one new hut ward, for special disease, has already succumbed to its bad materials and has fallen down. The latrine accommodation of the hospital is insufficient for the increased number of beds ; but a letter has been sent to the Brigadier about it, and it will doubtless be remedied. Owing to the great weakness of the regiment all Brigade parades have been stopped, and both European and natives have been relieved of this extra duty. The men on the whole have had five nights in bed.

Total number of admissions into hospital 2,086 for the year.

H. M.'s 10TH REGIMENT N.I.

MHow.—In Medical Charge of Surgeon-Major T. MURRAY ; Strength 494.

The head-quarters 10th Regiment N.I., marched from Maligaum on the 19th February and arrived at Mhow on the 2nd March, and on the 12th September detached 200 men for duty to Indore, and afterwards two companies temporarily to Asirgarh, withdrawing one company from the Indore party.

The meteorological features of the past year have been remarkable. The monsoon in the previous year had failed over a large extent of country in the western districts, and was followed in the cold season, for a short time, by unusual coldness at some places ; as at Maligaum, for example, where the thermometer ranged from 42° to 41°, on six different occasions in the night. The hot season was marked by unusual highness of temperature, which was considered to exceed by 6° the average temperature of this station ; and previous to the setting in of the monsoon, on the 13th June, the heat ranged from 98° to 102° in the shade, and for upwards of a week the weather was very trying. The rains, however, proved favourable, and 37·47 inches were registered, which exceeds the average fall of the previous twelve years. The average in that time has been only 33·64, and the rainfall has been marked by considerable fluctuation in the amount gauged each year, varying from 25·83 to 52·44, as may be seen from subjoined table. There was a little difference in the amount of rain registered at the different hospitals, but that of the staff hospital has been accepted as the best approximation of rainfall in cantonment from its high and central position. The annual mean temperature was 73° minimum, 84° maximum, 57° extreme minimum, and 102° extreme maximum.

Rainfall from 1860 to 1871.					Rainfall in 1872.				
1860	...	...	...	25·83	January	...	...	...	...
1861	...	...	...	36·57	February	...	...	...	0·10
1862	...	...	...	35·88	March	...	...	...	0·03
1863	...	...	...	26·38	April	...	...	...	0·62
1864	...	...	...	25·84	May	...	...	...	...
1865	...	...	...	29·13	June	...	...	...	8·65
1866	...	...	...	33·27	July	...	...	...	14·71
1867	...	...	...	39·99	August	...	...	...	9·40
1868	...	...	...	29·51	September	...	...	...	3·06
1869	...	...	...	37·55	October	...	...	...	...
1870	...	...	...	52·44	November	...	...	...	...
1871	...	...	...	30·60	December	...	...	...	0·90
					Total...				37·47

The regimental lines are built of sun-dried mud bricks, with floor not raised above the surrounding level, single-tiled roofs, and are ventilated through the door of each hut. The huts afford sufficient accommodation for single men, but are apt to be overcrowded when men have visitors from their native villages residing with them. The natural drainage is very good, but further measures are required to improve it, to prevent water lodging, and to divert the refuse water or sullage of the lines, after heavy rain, from the wells. The attention of the authorities has been drawn to the subject, and it is expected that a more systematic plan of drainage will be initiated, to remedy the present defects before next monsoon.

The hospital for the accommodation of sick of the two native infantry regiments, is an old bombproof building, with vaulted roof and several glazed skylights introduced above for the purpose of ventilation. It consists of two main wards—80 × 18 = 2,880, and two end rooms—18 × 8 = 576 or 3,456 ; also two enclosed verandahs, and four corner rooms—8 × 8 which are used as dispensaries and storerooms. The height of walls to springing of arch is 7½ feet in the two main wards, and 8 feet in end rooms. The cubic space in the main ward is 80 × 18 × 7½ = 10,800 feet. The two wards can accommodate 32 patients, giving 90 super-

ficial feet and 818 cubic feet per man ; but they are estimated by the Engineer Department as capable of receiving 52 patients by crowding, giving 55 superficial feet and 503 cubic feet. To each regiment is assigned 1 room—80 × 18 × 7½—and two small end rooms—9 × 8 × 8—one of which has been heretofore used as a guard-room, and an enclosed verandah 30 × 8 × 8—one-half of which has been used as a reception room and office. The ventilation of the building was indifferent, but has been somewhat improved by the introduction of skylights in the vaulted roof, and by opening two doors on the eastern verandah to allow of more thorough perfllation. This has counteracted to some extent the unavoidable crowding in the rains, but after the monsoon a surgical case in the 10th N.L.I., and four in the 16th N.I., subsequently, assumed a sloughing character, and had to be removed to tents, and the hospital walls scraped and white-washed. The disease had formerly appeared in 1870 from overcrowding and imperfect ventilation, engendering an impure hospital atmosphere. Shortly after our arrival, the inadequacy of accommodation for the sick of native troops, was brought under the notice of the military authorities by me, as senior medical officer Indian service; and a second hospital was recommended for the sick of one of the regiments stationed here, and which has since been sanctioned. In consequence of the crowded state of the hospital, tents had to be pitched in the compound after the rains, when there were 112 men on the sick list.

The water-supply is derived from four wells, two of which are assigned to each regiment; and from another—that is used by the lower castes—that is common to both corps. It was barely sufficient last season for the requirements of the native troops, but by management it lasted until the setting in of the monsoon, the officers having had to depend on an allowance from a private well. The well in the hospital compound was the only one that completely failed, and it dried up early in the season. The wells are situated between the lines and permanent latrines. The quality of the water was reported to be not so good as could be desired, and a fresh analysis was obtained from the Chemical Analyser to Government, which confirmed his former opinion. The sample sent from the well of the 10th N.L.I. was found to be less pure than that of the 16th N.I. well, and to contain a large proportion of solids, chlorides, and nitrates, from the well being more liable to receive the surface drainage of the lines after heavy rain. The analysis is subjoined :—

Report of Analysis of Water from Wells of 10th and 16th N. I., Mhow, 4th May 1872.

10th N.L.I. 16th N.L.I.

					Grains per Gallon.	
Total solids dried at about 280° F.	...	...	...	...	48·16	27·16
Loss on ignition	...	...	...	...	5·04	·28
Chlorine...	...	...	...	...	4·78	1·49
Sulphuric Acid...	...	...	...	...	1·54	1·05
Lime	...	...	...	...	6·58	8·61
Magnesia	...	...	...	...	3·15	2·65
Hardness before boiling					29·75	22·02
„ after „					14·00	5·252
<i>Ammonia.</i>						
Indistillate from carbonate of soda	...	...	...	...	0·131	·0117
„ from permanganate of potash	...	...	...	...	·0105	·0117
Of nitrates and nitrites	...	...	...	...	·1890	·0483
<i>Oxygen.</i>						
Total required by the water at 140° F. in presence of acid	...	...	...	...	·0350	·0336
After evaporation to about $\frac{1}{10}$ with chloride of aluminium and redilution	...	...	...	...	·0112	·0070

Sediment.

10th N.L.I. Well water.

Scanty, chiefly vegetable debris, and carbonate of lime crystals, a few paramecia.

16th N.I. Well water.

Chiefly vegetable debris, a few carbonate of lime crystals, a few paramecia and actinophrynia.

The system of Trench-latrines was ordered to be introduced at this station, and the experiment was commenced on ground 26½, 88, and 136 yards, respectively, from the wells; but on my indicating the risk of contamination to the water-supply, they were moved to a greater distance. In consequence of the representation made on the subject, a committee was assembled, and reported that the available ground for Trench-latrines consisted of black soil to a depth of about 12 feet from the rock but in parts less, that it becomes broken up into holes and fissures in the dry season, that water-courses were running in close proximity to the wells, and that when heavy rain occurred the ground might be more or less flooded, and the water, it was apprehended, might be apt to contaminate the wells. They ventured to suggest that in the Bengal Presidency, where the Trench-latrine system originated, the native troops are not in the habit of keeping their families with them, that on the Bombay side a native corps has usually about 300 women and about the same number of children, and that danger to health would be likely to arise, were the native troops compelled to use open trenches, at stations like this, in heavy rains, where the black soil quickly becomes mud; and that it would be almost impossible to prevent the verandahs and even rooms of houses from being used by women and children for the purposes of nature rather than be exposed to the inclemency of the weather. Not only the native troops, but the more respectable class of native inhabitants, dislike the use of trenches, on account of the exposure and inconvenience to their wives and families. The men had become accustomed to the use of the permanent latrines, from which the filth was removed beyond cantonments, and the system was unattended with risk to health or to drinking-water. The committee considered that the saturation of the ground in the vicinity of the lines, with the excrementitious matter of upwards of two thousand individuals, would be apt to induce "a filth-sodden soil" which would predispose to disease of a low type, and produce a deteriorating effect on the health of the troops, though such influence might no doubt be lessened by deep ploughing and subsequent systematic cultivation; but to carry out this would be attended with considerable expense from want of water. The matter was referred to Executive Engineer, who admitted the existence of risk in one well to be slight, in that it might be affected through the neighbouring nullah, in one on lower ground that there might be risk of pollution, and in one, which was used by the lower castes, still more likely to be the case. On the whole, the risk of contamination was small, though perhaps sufficient to deter in carrying out a scheme which, whatever its merits and however well it may have worked elsewhere, is not universally popular, as at Belgaum, Rajkot, and Kurrahchee, and is impracticable during the rains, if the monsoon is severe. The Sanitary Commissioner on being consulted stated that the ground used need not be large, and might be trenched over and over again, that deodorization is immediate and complete, that if moisture be carefully excluded, disintegration is so absolute, that after a time the fæces disappear, and the product is a rich compost, so free from smell that it may be on the table of a room; and as to whether it is harmless or not that is a point which might be argued *ad infinitum*. He instanced in proof the experiment of the Hyderabad Jail, where the same ground had been trenched over fifteen times in three years and four months by about 300 prisoners, and that it might be doubted whether it had 3 inches and 4 cents of rain in that time. This result seems evidently to have been owing to local circumstances of an arid climate, suitable soil, with very little rain, and the long continued high temperature, preventing putrefactive changes, a point essential to the assimilation and neutralization of excretal matter. The condition of such a locality, however, can scarcely be compared with one like this station, with an average of 33 inches of rain, and reaching to 52 in a wet season, in which the soil remains more or less saturated for months. It is probable that the views taken by competent observers may have been owing to difference in local circumstances. In the Bengal Presidency, the reports, as far as known, seem to have been favourable; whereas under the eye of the Deputy Inspector-General P. D. A., the result was less satisfactory, and he based his opinion as to its unsuitableness from what took place under his own observation and from a personal knowledge of nearly every station in the Bombay Presidency; and the state of the trenches that he describes as having witnessed at Poona also occurred at this station in heavy rains. Researches in agricultural chemistry show that no two soils possess the same absorbent power, and that their capacity in this respect is limited, the earth becoming saturated at a certain point. Moreover, as yet there is no satisfactory evidence of the earth's power to destroy contagion of zymotic disease; and the deposition of large collections of excretal matter, in close proximity to dwellings and water-supply, may, hereafter, be attended with risk of increase of sickness in such localities, as has been clearly indicated by one of the ablest writers at the presidency, who, in reviewing this subject, after alluding to the extensive burial of human excrement that is now going on around every cantonment, in the neighbourhood of jails, and near many of our large cities, and while fully admitting that earth is a great deodorizer and disinfectant, points out that to such properties there must be some limit. And, as years pass on and such powers are more tested, the time will at length arrive, when the burial of the material in question, in the neighbourhood of our large stations, may not necessarily imply destruction; and the idea is not farfetched, that by the wholesale burial of such material, we may be simply storing the seeds of epidemics which may at some future occasion be again turned up and restored to activity.

In the past year the average strength was 494, the admissions into hospital were 885, the deaths 3, and the number sent on sick leave 7. The daily average sick was 23 or 4·61 per cent., the proportion of admissions to strength was 178·34, and of deaths to strength 0·6. In the year 27 men were pensioned, whose average service was 20 years, 2 months, and 11 days, and two men of short service were discharged from the service for atrophy and general debility. Fever has composed the greater portion of the admissions, and was most prevalent in the past monsoon season, when the disease was of a malarious character, and was obstinate for a time, particularly in men whose constitutions had previously been affected by the disease. In some instances that had been treated elsewhere, hypodermic injection had been used with only temporary benefit, and had left large, indelible, ulcer marks on the arm. In the hot season the disease was apparently connected with climatic causes, and from exposure while repairing the lines, which was, however, reduced as far as practicable; also, probably, to a certain extent from picket duty that was required to carry out the quarantine arrangements up to the 22nd June. In the rains and cold season the usual thoracic complications were met with, and in the hot season neuralgic headaches were not unfrequently complained of. There was no case of typhoid fever in the course of the year. Disease connected with innutrition has been present as usual, but has been most marked amongst the families. Were the condition and development of children taken as a criterion for judging of the health of native troops, the estimate formed would be an unfavourable one; for the majority of the children that are born in the lines are physically unfit for the ranks, and, indeed, a large portion are even unsuited for entertainment as recruit boys from weakly conformation and defective stamina. The other most important events in the medical history of the regiment, have been the occurrence of small-pox and the exemption from cholera, which prevailed in the camp and neighbouring districts in the the hot season. Small-pox was introduced by a recruit, and was contracted by him in all likelihood in some village on the line of march; and in his case the disease proved to be of a severe character, though he had been vaccinated in former years, but not since joining the corps. The disease, however, did not extend beyond five cases in all, being confined to two men, one woman, and two children. During the year an inspection has been made of every individual that came into the lines, even for a few days, and with good result. In accordance with instructions from the Inspector General, re-vaccination was commenced on 5th November 1872, but was not carried beyond 88 cases from failure of the supply of lymph, and of these 5 proved successful, 2 of which had small-pox previously, 1 had been protected by small-pox and vaccination, and 2 had vaccine marks on their arms. The number is too few to be relied on for generalization, but taken in connection with the results mentioned in the *Madras Monthly Journal of Medical Science*, it would evidently indicate that all recruits should be vaccinated on joining, and that none should be exempted from the operation on account of their having had small-pox previously or been vaccinated in their native country.

Diseases of the General System and affections of the Respiratory System were not numerous. Of the latter there were 15 from bronchitis, of which several were more or less phthisical in character; and 5 had to be invalided on this account—1 pleurisy, 1 phthisis, and 7 of catarrh.

Diseases of the Digestive System were more common, and the most important of this class were 1 of enteritis with perforation of duodenum, 7 dysentery, and 28 diarrhœa.

Enthetic Disease was very rare in the year under review, from causes which have been explained in former reports.

Injuries of various kinds of more or less severity were pretty rife: from this cause there were 15 wounds, 34 contusions, 13 sprains, and 2 fractures. Three casualties occurred in hospital: one from enteritis with perforation of duodenum, one from diarrhœa, in a man that had been attacked with the disease while on escort duty at Rutlam, and one from bronchitis with pulmonary and hepatic congestion and dropsy, in a man of broken constitution.

In conclusion it will be necessary to make a few remarks on the presence of cholera at the station. In the month of March, the disease was reported to have shown itself at Hurdah, in the valley of the Nerbudda, on the Khundwa road at Burwai, and on the railway works; and on the 22nd March the military authorities established quarantine, and formed an encampment at Kissonpore to E.N.E. of camp, which was afterwards transferred to Koomare village to the N.E. of cantonment; and all the travellers, furlough men, their wives and families were detained there for 48 hours, and afterwards for 24, on more favourable reports being received. And on the 22nd June all quarantine restrictions were withdrawn, and medical inspection of individuals coming from the Khundawa road was merely required, and that was eventually discontinued on the 31st July, with the exception of native troops and their families, who have up to the present time been seen previous to their being permitted to enter the regimental lines. At first tents were pitched, but afterwards grass huts were erected for the accommodation of those detained. On the 8th April, the disease appeared in the 15th Hussars, and was limited to five cases in all; on the 12th May there was one case in the horse artillery, and on

the same date disease showed itself in the 49th Regiment, in which corps there were 12 cases. In the sudder bazar the disease appeared on the 21st April, and from that date to the 16th June there were 33 cases.

The native troops in garrison remained comparatively free, and only one man of the 16th N.I. was attacked who had just returned from furlough, and had been allowed to enter camp before quarantine arrangements had been fully carried out; but those moving about in the districts were liable to diarrhœa and cholera, and several men were attacked when proceeding to join their corps. The first instance of the liability to severe diarrhœa occurred in the beginning of April, in a private of the 10th N.L.I., who was on his way to join regimental headquarters, and had halted at the dhurmsalla, and was there attacked with diarrhœa, and had to be conveyed to the civil dispensary, and sunk in thirteen hours; another, presented in a private who had returned from escort duty to Rutlam, who was attacked with diarrhœa and died after reaching camp. The most severe cases of cholera among native troops *en route* to join their corps occurred in May, when a party of 22 recruits who had come from Khundwa and had halted at the dhurmsalla to take their evening meal, and used the water of a well in the vicinity, which they found saltish and unpleasant to the taste. At 9 P.M. two men were seized with cholera, at 2 A.M. two more, and in the morning the disease had extended to nine cases, of which number eight proved fatal; four, in from seven to fourteen hours, and four, in from two to eight days. The quality of the water was suspicious; though used by all it did not affect the whole party; but this may perhaps have been owing to some having partaken more sparingly of it than others. On analysis the water from the well was found objectionable from the quantity of mineral impurities and sewage contamination, which was so strong, as to render it unfit for drinking purposes; and it was, in consequence, cleared out by the Engineer Department. The analysis is attached herewith.

Report of analysis of Water from a Well behind Dhurmsalla, Mhow.

(Taken on 9th May 1872.)

										Grains per Gallon.
Total solids dried at about 280° F	...	...	...	...	...	...	...	...	...	113.12
Loss on ignition	...	...	...	...	...	...	...	...	...	4.76
Chlorine	...	...	...	...	...	...	...	...	...	16.86
Sulphuric Acid	...	...	...	...	...	...	...	...	...	5.57
Lime...	...	...	...	...	...	...	...	...	...	31.98
Magnesia	...	...	...	...	...	...	...	...	...	9.69
Hardness before boiling	...	...	...	...	...	...	...	...	...	54.60
„ after „	...	...	...	...	...	...	...	...	...	34.30
<i>Ammonia.</i>										.....
Indistillate from carbonate of soda	...	...	...	...	...	...	...	...	...	.0064
„ „ permanganate of potash...	...	...	...	...	...	...	...	...	...	.0012
Of nitrates and nitrites	...	...	...	...	...	...	...	...	...	6.720
<i>Oxygen.</i>										.....
Total required by the Water at 140° F. in presence of acid	...	...	...	...	...	...	...	...	...	.0490
After evaporation to about $\frac{1}{10}$ with chloride of aluminum and redilution	...	...	...	...	...	...	...	...	...	.0112

Sediment.

Abundant vegetable matter in a decomposing state, conferva, monads, nanicula.

The last case was in a recruit who was on his way to join, and had come from Simrole, where three fatal cases were reported two days previously, and who sunk in twelve hours after reaching the quarantine station. At the quarantine station, a medical subordinate was detailed with a supply of medicine ready for issue, with medical comforts and a small establishment of 2nd class servants, entertained for the occasion. Whatever may be said against the establishment of a sanitary cordon, it on this occasion succeeded in intercepting fourteen cases of the disease at the quarantine stations, in the northern and eastern end of camp.

Kissonpore Station E.				Koomare Village N.E. of Camp.			
	Strength.	Admitted.	Died.	Strength.	Admitted.	Died.	Total.
Men	39	2	1	37	10	9	92 detained.
Women	8	2	...	1	...	...	14 attacked.
Children	7	...	...	...	...	...	10 died.
Total	54	4	1	38	10	9	

The system of erecting grass huts for the purpose of accommodating men detained while *en route* to join their corps, and a hospital of the same materials, but of larger dimensions, for the reception of any taken ill, answered satisfactorily, and isolated such cases during the past season. The quality of the water that was used by the party of recruits, who had come from an infected district and were predisposed by fatigue of the march, may have been one of the factors and may have contributed to the development of the disease; but, otherwise, as far as could be judged, the affection was imported from the infected districts, and the establishment of quarantine tended to limit the disease.

H. M.'s 16TH REGIMENT N. I.

MHOW.—In Medical Charge of Surgeon A.N.E. RIDDELL; Strength 646.

H. M.'s 16th Regiment N. I. marched from Ahmadnagar on Mhow, on the 3rd and 5th of January 1872, arriving at the latter station on the 23rd of the same month. Nothing particularly worthy of notice occurred on the march.

On the 6th of March the right wing was sent on detachment duty to Indore, where it remained till the 14th September. Average strength of the regiment, Europeans 8, natives 646. Average strength of the wing at Indore, Europeans 2, natives 263.

Sickness and Mortality: The health of the corps has been tolerably good during the year—average number of daily sick 207.

There have been 917 admissions into hospital. The principal diseases and admissions were as follows:—

Chicken-pox 10, measles 1, fevers 319, rheumatism, acute 9, chronic 34, lumbago 19, venereal 15, diseases of the eye 18, diseases of the lungs 64, diseases of the intestines 65, diseases of the cellular tissue 22, cutaneous diseases 73, debility 29, burns and scalds 119, wounds, contusions, &c., affecting various parts 179.

One case of mania occurred. The patient was sent to Colaba Lunatic Asylum.

There were no cases of small-pox.

There have been twelve deaths: 5 from cholera, 1 from intermittent and 1 from remittent fever, 1 from acute diarrhœa, 1 from dysentery, 1 from bronchitis, 1 from pneumonia, 1 from debility, after recovery from intermittent fever, with ulcer, the sequelæ of hypodermic injection of quinine, at Indore.

The number of admissions from fever has been slightly in advance of the average of the three preceding years. The greatest number of admissions from it were in September, when 52 cases occurred, and in October, when 68 were admitted.

The disease was of the malarial type, and, generally, yielded readily to the treatment employed, viz., quinine and liquor arsenicalis—the latter in 15 minim doses, in some bitter infusion. I found this treatment satisfactory.

Cholera appeared in the surrounding districts in April. A sepoy returning from furlough was admitted on the 14th of April and died 28 hours after admission. The other four cases were treated in the cholera camp, outside cantonment limits, not in the regimental hospital.

The measures adopted by the authorities to prevent the admission into cantonments of people ill with cholera, were a police cordon and quarantine of not less than 48 hours. Temporary hospitals were erected outside cantonment limits, in which cases were treated. Many of the cases which occurred, were men returning from furlough, who contracted the disease on the road.

In the month of October, four cases of ordinary ulcers took on a sloughing action. Perhaps the cause may have been the crowded state of the hospital, due, firstly, to increase in

the number of admissions from fever ; secondly, to the admission of the sick arrived with the detachment from Indore. The means adopted have been already mentioned in the monthly report.

They were emptying the hospital as much as possible by pitching tents for the reception of the cases of ulcer, and the free use of disinfectants.

The patients suffering from sloughing ulcer were allowed full rations of meat arrack, &c.

Three cases have recovered. The fourth remains under treatment, and does not, I regret to say, make any favourable progress. The other cases having been reported in the monthly returns do not call for a repetition of the remarks.

The regimental lines are built of sun-dried bricks and are tiled. There is no overcrowding. Owing to the materials of which they are constructed, the walls occasionally fall in the wet weather. Huts are easily repaired.

State of lines and subsidiary buildings.

This I consider to be good. The conservancy arrangements are adapted to both the rainy and dry seasons. In the rains the Dry-earth conservancy is carried on in latrine buildings, of which there are two for men and one for women. In the dry season the Trench system is in vogue. Both latrines are to the north of the lines and generally to leeward of them.

Sanitary condition and conservancy.

The hospital is a pukka built building, with ventilators in the roof, which is arched and covered with chunam on the outside.

State of hospital and buildings.

The accommodation is insufficient. The floor is of chunam which is a great drawback, as it cannot be either "leaped" or cow-dunged, much dust is the consequence. It is also expensive and very tedious to repair.

There is no ward for either ophthalmic or contagious diseases, no guard-room and the accommodation for the subordinate medical department is insufficient. A deadhouse is also required.

These deficiencies have been annually pointed out for some years past, and I believe that steps will be taken to remedy the principal deficiencies. The latrine is in rear of the hospital and carried on with the Dry-earth system.

Water-supply is good and sufficient from three wells ; the quality of the water is unknown to me.

Water-supply.

Annexed is a table showing the rainfall and temperature :—

Table.

Months.	Thermometer.			Rainfall.		Prevailing wind.
	Maximum.	Minimum.	Average.	Inches.	Cents.	
February	88	54	71·	...	...	N.W.
March	95	66	80·5	...	...	S.E.
April	100	71	85·5	...	89	N.W.
May	103	78	90·5	...	...	N.W.
June	104	75	89·5	7	2	N.W.
July	84	72	78·	12	28	S.W.
August	82	72	77·	8	30	S.W.
September	86	74	80·	4	17	N.W.
October	85	62	73·5	...	...	N.W.
November	81	60	70·5	...	...	N.E.
December	75	57	66·	...	79	N.E.
			Total ...	33	45	

Prevailing Diseases.—Fever, rheumatism, lung and bowel diseases, skin diseases, and contusions, &c.

Vaccination.—This is carried on in the prescribed manner.

Rations good, and no scarcity has been reported. Vegetables, native and other, easily procured.

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H. M.'s 3RD REGIMENT N.L.C.

NEEMUCH.—In Medical Charge of Surgeon F. H. SMITH; Strength 309.

1. *Health.*—The general health of the men during the year 1872 has been very satisfactory, except the latter portion of the year, during which period fever of an intermittent type was unusually prevalent, not only among the men of the cavalry, but such was the case with the inhabitants of the vicinity and the men of the different corps stationed at Neemuch.

The following table shows the difference of sickness and mortality between the year 1871 and 1872 :—

	1871.	1872.
Average strength...	271	309
Admissions	327	387
Discharges	331	381
Deaths in hospital	2	1
Average daily number of sick	12·7	13·8
Percentage of treated to strength	127·7	129·4
„ deaths to strength	0·7	0·3
„ deaths to treated...	0·6	0·2

2. *Admissions and Discharges.*—There were 13 cases remaining on the sick list at the end of the year 1871 : 387 admitted during the year 1872, which makes total treated 400, out of which 381 discharged, 1 died, and 18 remaining under treatment at the close of the year 1872.

3. *Otherwise Discharged.*—The discharged number 381, mentioned in the preceding paragraph, contains 22 marked as discharged or otherwise : 8 of these were sent on sick certificate to their native country, and 9 discharged from sick list, as they were pensioned and, consequently, struck off from the regimental strength. The nomenclature of diseases remaining were changed from one to another while under treatment in hospital.

4. *Prevailing Diseases.*—Throughout the year fevers, rheumatism, ophthalmia, and local injuries, have been the most prevalent : 207 cases of fever admitted during the year, which contributes 66 admissions per cent. to average strength, or an increase of 9 per cent., when compared with the year 1871. The admissions from fever and the average strength at head-quarters have been as follows :—

	January 1872.	February "	March "	April "	May "	June "	July "	August "	September "	October "	November "	December "	Total.
Strength	320	283	273	276	276	313	317	317	320	328	339	352	3,714
Fever	6	6	4	5	8	12	8	14	16	55	43	30	207

The usual treatment of quinine, arsenic, and bark was adopted for the cure of these cases ; the former was generally used by the mouth, and also tried by subcutaneous injection with the hypodermic syringe successfully.

5. *Rheumatism.*—Thirteen cases admitted from this complaint : all treated with colchicum and iodide of potassa, with opiates at night to relieve pain ; in addition to which every sick patient had issued to them some warm clothing from the hospital stores.

6. *Syphilis.*—The total number of cases treated from this disease during the last year have been 7, there being a decrease in the number of admissions by 10 compared with the report of the year 1871 ; but no mercury was administered internally in any of these cases.

7. *Ophthalmia.*—Eleven cases admitted, 10 discharged to duty, and one still remaining under treatment.

8. A case of deafness has been recommended for pension, and a case of polypus nasi is improving gradually, and there is every hope of his recovery, he being actively treated.

9. *Lung Diseases*.—The case of pneumonia was the only one in a critical state ; however it yielded to treatment adopted.

10. *Bowel Complaints*.—Seven cases of dysentery, and five of diarrhœa admitted : all of these were of a trifling character, and readily yielded to the usual treatment.

11. *Urinary Diseases*.—Seven cases of gonorrhœa, and one of phymosis came under treatment : all cured and discharged to duty.

12. *Skin Diseases*.—Thirty-one cases admitted under this heading, but none of them demanded particular notice, but readily yielded to treatment, and were cured and discharged to duty.

13. *General and Local Injuries*.—Fifty-five cases admitted during the year—all accidental—from kicks, falls, and bites from horses. One of the native officers was admitted on the 6th of October 1872, with partial dislocation of the right shoulder joint, caused by his horse falling with him while he was on duty ; the case is doing well and now almost cured.

14. *Mortality*.—One fatal case occurred in hospital during the year, in the month of September, from remittent fever complicated with derangement of the brain. Besides this two men died—one from heat-apoplexy (in June) at Mulharghur about 16 miles from this, where he was on outpost duty, and the other from general dropsy, while on sick leave. The latter case was in a critical state of health, very much emaciated, and was recommended for pension by the annual General Invaliding Committee.

15. *Vaccination*.—The vaccination was properly carried out throughout the past year, and the lymph employed has been of good quality.

16. *Food*.—Satisfactory. The men purchase their own food and vegetables ; the supply of the latter is abundant during the cold season, but very deficient in the hot weather. Milk is cheaper at this station than at others, and can be procured at any time ; consequently, the men generally take the advantage of procuring the same. The favourite food of the Mussalman is mutton which they consume more than other castes in the regiment.

17. *Invaliding*.—Eighteen men were proposed and sent before the General Invaliding Committee, by which ten men were recommended for pension, and the rest pronounced fit for further service.

18. *Hospital accommodation*.—No. 5 Barrack of the old European infantry lines is still in use as a hospital, where there is a want of an isolated ward for contagious diseases, as well as a deadhouse ; otherwise it is satisfactory in every other way as stated in last year's report.

19. *Latrines*.—The latrines are good and strongly built, but still require some alteration in order to carry off the waste water which natives invariably use for ablution. Acid carbolic in solution is used for deodorizing purposes, the efficiency of which is proved. I frequently inspect the latrines myself to ensure the cleanliness of the same.

20. *Cavalry Lines*.—There has been no alteration during the past year.

21. *Water-supply, &c.*—Entirely from wells, quality good, and is drawn and supplied partly by bheesties and men of the regiment themselves ; but the supply was not abundant about the commencement of the monsoons, and had to search for it from different wells in cantonment.

22. Two European officers of the cavalry have been sent to England for change of climate during the past year, and I am about to proceed on furlough to England, my health being very indifferent, having been four years in charge of the 3rd Cavalry, half of this period I have passed in Neemuch and Rajpootana, a very trying climate.

22. The Deputy Inspector General of Hospitals N.D.A. inspected the cavalry hospital on the 28th December 1872.

H. M.'s 22ND REGIMENT N.I.

NEEMUCH.—In Medical Charge of Surgeon G. ASHER, M.D. ; Strength 638.

The regiment arrived in Neemuch in January 1871 ; so that this is the second year of its being quartered here.

The sickness among the men, great in 1871, has been still greater in 1872, the ratio of admissions to hospital being in the two years, respectively, 168 and 182 per cent. ; but this amount of ill health is nothing new in the station. I find that the native infantry regiment (the 28th) relieved by the 22nd had, while quartered in the same lines in Neemuch, a percentage of sick of 174 in the year 1869, and of 171 in 1870. In glancing over returns of previous years, I observe that similar circumstances obtained.

During the year there has been prevalent among the men of the 22nd no sickness causing much inefficiency, excepting malarious fever, which yielded 841 out of 1,163 admissions to hospital. These figures are probably not strictly correct; as there is no doubt that when a man presents himself with an ailment, not thoroughly developed or readily diagnosed, the difficulty is met by entering the case under the head of Fever: yet the fact stands good, that malarious fever has been and is the bane of the station.

In attempting to form some notion of the possible cause of so great a prevalence of fever from year to year among the men occupying the native infantry lines at Neemuch, I have framed the following tables:—

YEARS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
<i>For 1871.</i>												
Number of fever cases.	24	13	14	7	14	14	23	42	75	162	248	119
Rainfall ... ..	...	...	...	...	0·47	6·59	4·83	5·21	2·47	...	1·72	...
Medium temperature ...	...	66	72	82	84	77	71	72	73	80	72	64
<i>For 1872.</i>												
Number of fever cases.	39	13	29	40	22	28	31	35	71	208	197	128
Rainfall ... ..	...	...	...	...	...	5·82	6·91	17·25	5·17	1·22	...	...
Average temperature ...	61	67	75	86	92	82	78	73	74	75	67	65

The prevailing wind in October, November, and December is from the N.E.

There is nothing much elucidated from this; but it may be observed, that in 1871 the sickness from fever attained its maximum in November, and in 1872 in October; and that in these months, in the respective years, the rainfall and medium temperature closely corresponded.

In relation to a lesser number of cases of fever and no rainfall, the same remark holds good inversely as regards months, and this, in a measure, tells against the theory of malaria being principally generated during the drying of moistened ground. Fever prevailed in a greater degree in the months when rain fell, than in those when evaporation from the previously saturated ground and the margins of ponds was actively and uninterruptedly going on.

I find that several medical officers have attributed the prevalence of sickness among the occupants of the native infantry lines at Neemuch, to the superficial area in the huts being so small as not to admit of charpoys being used in them, the men being thus necessitated to lie on the earthen floor; and to deficiency in ventilation.

In the former postulate I concur, and remark that the floors of most of the huts are below the level of the ground outside; but I cannot think there is any great deficiency in ventilation (at any rate in those occupied by single men). The huts are covered with a single layer of tiles (very permeable to air); which tiles are loosely laid and not cemented together.

The comparative immunity from sickness of the native cavalry soldiers at Neemuch is well known, and may, very probably, in some measure be ascribable to the huts in their lines being larger than those in the infantry lines, and to mostly all the men being provided with charpoys. But, in explanation of the matter, I should attach greater weight to the superior *physique* of the cavalry soldier, to the less exhausting nature of his duties, and to other advantages which it is well known he possesses.

In a sanitary aspect the native infantry lines at Neemuch surpass those of the cavalry.

In September, October, November, and December, the months in which malarious fever is so very rife among the native infantry soldiery at Neemuch, drill and parade exercise is pushed to the utmost in preparation for meeting the review by the Officer Commanding the Division, and the energy of the man is severely taxed; moreover, at this season he is frequently exposed to wet, when on duty wears for 24 hours damp boots on naked feet, and has no facilities for drying his wet clothing when he returns to his huts.

Four cases of cholera occurred in July, and of these three proved fatal; upon which the regiment was moved out of lines into camp.

The interior of the huts were cleaned and white-washed, and the whole surroundings underwent a process of thorough brushing up.

After the lapse of a fortnight the lines were re-occupied, and no further instance of the disease occurred among the residents in them.

No other disease noted in the return seems worthy of special remark.

The invalids of the season numbered 21.

Six women and seventeen children have died in the lines of the regiment during the year. These are taken account of in the mortuary returns pertaining to the general population of the cantonment. One of the women died from cholera; it was the first instance of the disease as pertaining to the regiment.

No extraordinary scarcity or dearness of alimentary supplies for the men and their families has occurred; but fruit and vegetables have not been obtainable in abundance, and in the hot season were scarcely procurable.

The water of the wells in use seems to be good, and the supply is reported to have been sufficient.

The conservancy of the lines has been excellently maintained (surface drainage duly attended to); and the latrines—although at an unavoidably inconvenient distance from the lines—are of satisfactory construction, and have been kept in a cleanly condition.

The hospital and its subsidiary accommodation satisfactorily meets requirements.

SQUADRON H. M.'S 3RD REGIMENT LIGHT CAVALRY.

NASIRABAD.—In Medical Charge of Assistant Surgeon SIMPSON; Strength 133.

The average strength of the squadron during the past year has been 133.

The number of admissions 196.

The average number of sick 5.18.

The general health of the squadron has been good during the year.

During the months of September and October ague was prevalent.

The principal diseases treated were ague, contusions, rheumatism, conjunctivitis, dysentery, and diarrhoea.

One death occurred during the year.

Six men were sent on sick leave.

State of the Lines.—The lines are in good order and kept clean. The hospital is in good condition, and sufficient for the accommodation of the sick.

There has been no epidemic of cholera or small-pox during the year.

Vaccination has been regularly carried on in the squadron during the year.

H. M.'S 23RD REGIMENT N. I.

NASIRABAD.—In Medical Charge of Assistant Surgeon J. SIMPSON; Strength 626.

The average strength of the regiment during the past year has been 626, the number of admissions 1,891, the number remaining on 1st January 1871, 34, and daily average sick 60.9.

The regiment arrived at Nasirabad in the end of January 1872 from Poona, and up to the middle of August the general health of the regiment was good; from that time ague became very prevalent, and continued until the cold weather set in.

The principal causes of admissions were as follows: intermittent fever 1,371, boils 43, dysentery 34, contusions 34, diarrhoea 33, catarrh 30, chronic rheumatism 26. The figures on the annual return show the remaining cases.

The most obstinate fever cases were in those men who had suffered from it when in Kattywar. Hypodermic injection of quinine was tried in a good many cases with success, and only in one did an ulcer follow.

The dysentery and diarrhoea cases were nearly all in men who were recovering from prolonged and repeated attacks of fever.

The rheumatism and catarrh cases generally occur in the cold season.

The contusions were nearly all caused by bad fitting boots when on the march.

Six deaths took place during the year: two from fever, one from scurvy, one suddenly from disease of the heart, one from pneumonia, and one from constipation.

Seven men were sent on sick leave.

State of the Lines.—The lines of the regiment are bad; they are built without a plinth, on low ground, and have very little accommodation with no ventilation; the drainage might with great benefit be improved. The water-supply from the wells in camp is brackish, and the men have to be supplied with water for drinking purposes from Dilwarra, a village two miles from camp, where the water is good.

The hospital is in good repair, being a new building, and is one of the best I have seen. It is built to accommodate 88 patients in two large wards, besides three small separate wards for four in each. During the months of September, October, and November, owing to the great number of sick, it was necessary to have tents pitched in the compound. Quarters for the medical subordinates are in course of construction.

The Trench system of conservancy is carried out, and seems to answer when carefully looked after.

There has been no epidemic of cholera or small-pox during the year.

Vaccination has been regularly carried on in the regiment.

SANITARY REPORT BY THE SENIOR MEDICAL OFFICER ON THE HEALTH OF THE
NATIVE TROOPS IN THE NASIRABAD GARRISON DURING THE YEAR 1872.

During the above period the average strength of the native troops, staff and details, was 1,452. The percentage of sickness and number of deaths are shown in the table below :—

	Mean strength.	Mean daily average of sick.	Percentage of sick to strength.	No. of Deaths.							Total.
				Ague.	Scurvy.	Valve disease.	Pneumonia.	Diarrhea.	Constipation.	Inflammation.	
Squadron H. M.'s 3rd Regiment L. C. ...	133	3.58	10.15	...	...	...	...	...	...	1	1
H. M.'s 23rd Regiment N. L. I. ...	626	60.9	307.5	2	1	1	1	...	1	...	6
H. M.'s Staff and Details ...	693	4.68	30.6	...	...	...	...	1	...	...	1
Total...	1,452	78.35	347.26	2	1	1	1	1	1	1	8

H. M.'s 23rd Regiment N.L.I. arrived in Nasirabad on the 25th January 1872 from Poona. During the year the health of the men was on the whole good, with the exception of the months of September, October, and November, when they suffered very much from fever; they were not, I believe, in a healthy state when stationed in Poona, having suffered very badly from fever in Kattywar. On arrival at this station they had to repair the lines, which exposed them to a burning sun during the hot weather, and was trying to a great many of the men.

Six deaths took place in the regiment: two from fever, one from pneumonia, one from scurvy, one from constipation, and one from valve disease of the heart.

The squadron of the 3rd Regiment L.C. has been stationed at Nasirabad for two years.

During the past year the health of the squadron has been very good compared with the former year. The admissions for 1871 numbered 332, for 1872, 196.

One death took place during the year from inflammation.

The lines of native infantry are bad, they have little accommodation, and are badly ventilated. The situation is low and too flat for proper drainage.

The cavalry are in a far better situation, and have better accommodation.

The infantry hospital is in a new building with sufficient accommodation for the sick, and separate wards for contagious diseases; it is situated on a rising ground to the south of the lines. Quarters for 1st class hospital establishment are required.

The cavalry hospital is also a new building, but placed rather too far from the lines.

The Trench system of latrines has been in operation in the squadron and infantry during the year, the only drawback is the distance the women and children have to go, owing to the situation of the only ground available for the purpose.

The health of the staff and details has been satisfactory during the year. One death took place during the year from diarrhœa. The lascars occupy an old cookhouse which has been partitioned off into the number of rooms required; it is situated close to the cavalry hospital.

During the year the fall of rain has been above the average, and has amounted to 29 inches 3 cents. The following table shows the quantity of rain registered each month:—

Locality.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total.	
	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.
Rainfall registered at the hospital of H. M.'s 23rd Regiment N. L. I.					20				176	317	529	1411	425									25	29	3		
Total...					20				176	317	529	1411	425									25	29	3		

RIGHT WING H. M.'S 25TH REGIMENT N.L.I.

AUGUR.—In Medical Charge of Assistant Surgeon R. CALDECOTT; Strength 248.

Average strength	..	...	...	...	...	...	248·27.
Average daily sick	...	...	...	...	...	...	9·26

The lines are in fair condition. They are built in four parallel rows, with a space of about forty yards between each row. The roofing is not very good, and they were found to leak considerably during the rains. The quarter and store-guard buildings have been condemned.

The lines are situated about three quarters of a mile to the north of the city of Augur, the lines of the Central India Horse being between the two. The hospital stands about 800 yards to the north-east of the lines. The drainage throughout the lines is fair. The latrines are placed about 500 yards to the west of the lines. They are on the Trench system and work satisfactorily. There are two large tanks on each side of the city. The bunds of both of these are defective. The country to the south-east of the lines is constantly in a swampy condition. After the rains the smell from the tank nearest the lines was at times offensive.

The old hospital is being pulled down and a new one is being built close by. The situation is very good, being on the most rising ground in cantonment limits, but is rather too far from the lines. The new hospital and outhouses will be roomy, and the accommodation sufficient. The sick are at present in tents.

The average rainfall during the last year was 30 inches and 90 cents. The average temperature in the hospital verandah was at 6 A.M. 68·57, at noon 75·66, and at sunset 82·51. A hot wind blows throughout the day during the months of April, May, and the early part of June. Throughout the hot season the nights were cool.

The water-supply is derived from six wells in or near the lines: one about 40 yards to the north of the lines being reserved for the Purwarees, and another to the south of the lines for the Mochees. The quality is good and the supply is abundant.

The prevailing disease has been fever. The number of admissions having been 153. The total admissions have been 288. Cholera was prevalent in the city and surrounding villages during the hot season and the rains. Two cases occurred in the wing: one of these was a sepoy who had only just returned from furlough and had not been admitted into the lines; the other case was the wife of a sepoy. The greater number of the fever cases were, I think, due to the leaking state of the houses in the lines.

The lines have been recommended to be put in thorough repair, but little has been done on account of the hutting money not yet having been received.

I am not in possession of any meteorological reports for former years.

H. M.'s 4TH REGIMENT N.I.

BARODA.—In Medical Charge of Surgeon C. G. H. ROSS ; Strength 644.

H M.'s 4th Rifles have been stationed at Baroda during the past year. On the 16th and 17th November they proceeded by rail to Poona, in anticipation of the visit of His Excellency the Viceroy and Governor General of India, with the view of taking part in the camp of exercise formed there on that occasion. As expected, the health of the regiment, which had been much impaired by excessive sickness—especially ague and dengue—benefited in a marked degree by change to the Deccan. After an absence of three weeks the battalion returned to its old quarters in Guzerat, in better physical case and form than have been seen since its occupation of Baroda as a station more than two years ago. It is highly desirable that our sepoys should in foreign territory at least be better housed than they are, for the climate of this place is a trying one and exerts, as is well known, a deteriorating influence on native as well as European troops. Year by year as these reports are rendered, so certainly are the most miserable quarters assigned to sepoys forming part of the garrison here, discussed in strong and condemnatory terms. As written in last report the regimental lines for years have been notoriously bad. They are deficient in the most obvious sanitary requirements of the day. Old and condemned—the new lines should be built on plinths of brick work not less than three feet high, with spacious verandahs all round. The quarter guard and school house are in good order, but the solitary cells are unsuitable for prisoners in the hot weather. The new latrines, which were alluded to in last year's report, have been closed and the Trench system introduced but with indifferent result, as the sepoys do not care to work it effectively. The system is indeed admirable, and one that I recommended seven years ago when in medical charge of the 2nd Grenadiers at Surat. The coincidence of the systems is striking enough to warrant notice here.

Quoting my sanitary report, dated 1st January 1866, the following occurs :—

“ The subject of latrines has engaged my attention : I have, however, come to the conclusion, that it will be better to substitute for the buildings in question a trenched retreat in a field near the lines. A trench per company should be dug, and each individual, repairing thither, should be required, after responding to the call of nature, to cover his deposit with a handful of earth more or less. Offensive odours will, by the process suggested, be prevented and the purity of the air uncontaminated. In course of time the trenches will fill up and necessitate the selection of another retreat. Present arrangements are highly objectionable. The long distance men and women have to travel on natural errands, do now and must, more especially in the rainy season, render all sanitary measures in this direction abortive.”

But any system, however good, must fail, unless the sepoys themselves are interested in working it in all its details. With proper surveillance all difficulties would disappear, and I do not see why it should be withheld, when a sanitary question of great moment is involved. Supervision of some kind is requisite, for I know from personal inspection that the men do not all take advantage of the trenches ready dug for use, but actually commit nuisances within the canvas screens all over the ground. In the hospital latrine the Dry-earth system was adopted when the Rifles came to Baroda, and works well ; but, without constant supervision, the apathy of the sepoys and the carelessness of the sweepers would speedily induce them to disregard all its advantages.

Since last report there is nothing new to add touching the general sanitary conditions of the lines : these, as already stated, are notoriously bad. The ventilation and surface drainage are defective. The amount of sickness among the women and children was exceedingly great and the mortality large. When dengue was epidemic they suffered nearly as much as the men.

During May, June, and July, when the disease prevailed, 264 women out of 333 were attacked or 79·2 per cent., and 275 children out of 354 or 77·6 per cent. There were no deaths from this cause during the year. 5 women and 27 children died from various diseases, such as fever, bronchitis, and scurvy.

The hospital is good of its kind and in fair order. The dispensary is badly lighted and inconvenient. The outhouses are indifferent : quarters for medical pupils and a deadhouse are *desiderata*.

The year, in respect of temperature, rainfall, and meteorological phenomena, is to be considered an exceptional one ; and unfavourable from climatic causes on the health of the troops and civil population.

In March, April, May, and June, the heat was singularly trying and exhausting, although the mercury not unfrequently rose above 100 degrees of Fahrenheit's thermometer, yet the average maximum of these months did not reach that of those of the previous year. Exalted temperature, therefore, in 1872 does not so satisfactorily account for excessive sickness and deterioration of the general health, as the existence of some subtle change in the constitution of the

air itself. The average extremes of temperature had, however, a larger range, and were 5 degrees greater this year than last. Subjoined is a table of these extremes given by self-registering thermometer :—

Months.	1871.		1872.	
	Maximum.	Minimum.	Maximum.	Minimum.
January	89·3	58·1	76·2	52·9
February	84·7	63·0	80·5	53·9
March	91·6	70·7	89·6	67·9
April	98·6	81·1	95·0	73·4
May	96·8	80·5	97·6	78·9
June	93·9	82·6	93·8	80·7
July	88·6	80·6	85·4	77·5
August	82·1	76·1	83·3	76·1
September	86·6	77·4	85·3	75·7
October	87·8	74·6	86·4	66·2
November	84·7	72·4	85·0	51·0
December	79·8	74·1	80·1	56·2
Total ...	1,064·5	891·2	1,038·2	810·4
Average ...	88·7	74·2	86·5	65·5

The rainfall was above the average and the heaviest that has taken place for ten years, 1868 excepted. The following is the decimal fall from 1861 to 1872 inclusive :—

Years.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total.		
	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	
1863									1	53	16	38	10	51	2	92	2	42								34	23
1864											3	74	11	63	4	89		35								20	61
1865												96	6	41	10	93	3	18								27	48
1866											5	48	4	4	10	27		20								27	99
1867											3	45	7	80	15	57	4	50		96						32	28
1868											5	1	8	68	31	30		37								45	36
1869											1	29	10	8	5	43	19	62		34						36	76
1870												7	81	19	73	3	28	2	77							33	79
1871									14		20½		25½		166	4	32	15	9½	5	6		1		30½	28	4
1872											10	47	20	74	10	45	2	49								44	15
Grand Total...																										330	69
Average of the above																										33	69

The water-supply, which is wholly furnished by numerous wells in cantonment, is ample and considered good. Tested by chemical analysis it was found, as stated in former reports to contain nitrates and organic impurities.

The average strength of the regiment exclusive of six European officers was 644, with a daily sick average of 23·1. The percentage of treated to strength was 205·1, of deaths to strength 0·1, and deaths to treated 0·07.

Dengue excepted, there were more admissions from ague than any other disease. These respectively numbered 514 and 503.

Dengue, which for some weeks had been raging in the city of Baroda and by report fatally in not a few instances, first appeared in camp among the sepoys of the 4th Rifles on the 3rd May 1872. By the end of the month 262 admissions into hospital had taken place. In June,

248 additional cases had been received which, with 4 in July, made a total of 514 under treatment. On June the 5th, when there were 119 on the list, the epidemic culminated, and from the day in question continued to decrease until the 30th idem, on which date only two patients remained, and the disease may be said to have virtually died out, for thereafter the cases were few and far between. Dengue was no exception to the singular law of exclusion which obtains in epidemics generally, in virtue of which all other diseases are either in abeyance or comparatively rare. Ague, which from January to May had been the prevailing malady, only furnished four admissions in the latter month; so that on their discharge, June, as regards intermittent fever, opened with a clean bill of health. Before its close and after the epidemic had begun to abate, twenty patients had been admitted. In July 16 were under treatment, which is one in excess of the average number (15) of ague cases met with from January to July, May excepted. Including May, 16 is by a curious coincidence the average for the first seven months of the year. The average strength of the regiment during the prevalence of dengue was 627, and the number attacked as already stated was 514, the percentage for admissions to strength was 82·2

The disease generally began abruptly, although in many cases premonitory symptoms occurred, such as loss of appetite, obscure and wandering pains, tingling of the extremities, lumbar distress, general languor, and *malaise*. The rule, however, in the majority was that of a sudden invasion. During the febrile stage, with an average duration of 30 hours, the symptoms were well marked, the pulse was accelerated, great thirst and excessive headache occurred, with excruciating pains in the muscles and joints, which completely crippled the patient. As the fever abated the severity of the pains diminished. In many cases a scarlatina-like eruption was developed on the face, neck, chest, arms, and palms of hands. This symptom was invariably present in all the Europeans who were attacked. A scorbutic taint occurred in most of the sepoys affected. Relapses were occasionally met with. The convalescence of natives was in marked contrast to that of Europeans; which in my own case and experience was tedious and protracted. Dengue, however, is not a fatal disease. In hospital upwards of 500 cases were treated and there were no casualties. The affection, in the words of Dr. Flint, although extremely distressing and presenting not unfrequently severe symptoms, is rarely if ever fatal. Its apparent intensity is in striking contrast to its absence of danger. Whilst the epidemic was raging among the sepoys themselves, their families in the lines, as already stated, were not passed over by the prevailing malady. It is the opinion of many that the disease is contagious; I do not think it is; for its speedy and almost simultaneous spread would appear to render the theory of contagion untenable. From all I can gather the disease when epidemic seldom lasts more than 7 or 8 weeks. The *fons et origo mali* it were hard to determine. The malady was known in Baroda 44 years ago: this fact was stated to me by old men who suffered from the disease at that time. In those days there appears to have been less fever, but greater severity of pains in the limbs and joints with spastic contractions. Recovery was perfect in 3 or 4 days, differing from the present epidemic which frequently left the patient crippled for weeks and a martyr to boils and buboes. Children in a large majority of cases had convulsions.

In treating the disease salines with colchicum were freely administered. Quinine and iodide of potassium appeared to do much good. Hot fomentations, stimulating and occasionally anodyne liniments generally relieved the pains. Chloral was exhibited to induce sleep with good effect in all cases.

When the disease was dying out in the Rifles, it next appeared among the men of the Royal Artillery and attacked 13 out of 24, the strength of the detachment. Last of all the *employés* of the B. B. and C. I. Railway Company were affected. By this time the atmospheric condition with which at first the disease in its severest form was ushered in, was changing, for the severity of these last attacked was mild compared with those which were met with when the epidemic commenced.

The following tables have been prepared to show the prevalence of dengue in the various sections of the community in camp:—

Table showing dengue among the fighting men of H. M.'s 4th Rifles:—

Months.	Strength.	Average strength.	No. of cases admitted.	Percentage of admission to strength.	Percentage of treated to strength.	Remarks.
May	620	} 627	262	42·2	42·2	
June	629		242	39·4	57·8	
July	634		4	0·6	0·9	
Total...	1,883	627	514	82·2	100·9	

Table showing dengue among the regimental followers :—

Months.			Strength.	Average strength.	No. attacked by dengue.	Percentage of dengue to strength.	Remarks.
May	...	...	110	} 119	36	30·2	
June	...	...	124				
July	...	...	124				
Total...			358	119	36	30·2	

Table showing dengue among the women of followers :—

Months.			Strength.	Average strength.	No. attacked by dengue.	Percentage of dengue to strength.	Remarks.
May	...	...	50	} 63	15	23·8	
June	...	...	70				
July	...	...	70				
Total...			190	63	15	23·8	

Table showing dengue among the children of followers :—

Months.			Strength.	Average strength.	No. attacked by dengue.	Percentage of dengue to strength.	Remarks.
May	...	...	61	} 67	18	26·8	
June	...	...	71				
July	...	...	71				
Total...			203	67	18	26·8	

Table showing dengue among the men of sudder bazaar :—

Months.			Strength.	Average strength.	No. attacked by dengue.	Percentage of dengue to strength.	Remarks.
May	...	...	1,144	} 1,146	558	48·6	
June	...	...	1,144				
July	...	...	1,152				
Total ...			3,440	1,146	558	48·6	

Table showing dengue among the women of the sudder bazaar :—

Months.	Strength.	Average strength.	No. attacked by dengue.	Percentage of dengue to strength.	Remarks.
May	966	} 967	477	49·3	
June	966				
July	971				
Total ...	2,903	967	477	49·3	

Table showing dengue among the children of sudder bazaar :—

Months.	Strength.	Average strength.	No. attacked by dengue.	Percentage of dengue to strength.	Remarks.
May	349	} 349	596	142·1	
June	349				
July	349				
Total ...	1,047	349	596	142·1	

Table showing dengue among the men of the detachment Royal Artillery :—

Months.	Strength.	Average strength.	No. attacked by dengue.	Percentage of admission to strength.	Percentage of treated to strength.	Remarks.
May	24	} 24	13	54·1	54·1	
June	24					
July	24					
Total ...	72	24	13	54·1	54·1	

In the 4th Rifles all the European officers, 8 in number, with one exception were attacked sooner or later, and two ladies out of 4 were affected, but the children, 4 in number, escaped.

Admissions into hospital from all causes numbered 1,305: these with the remainder 16 gave a grand total of 1,321 under treatment; there was one death during the year from asthma. The deceased was never a robust man, and he appears to have suffered much from the malady complicated with bronchitis before coming into hospital. Expectorants and stimulants were freely given but with transient benefit. Emetics and *datura tatula* seemed to do most good. Death at last was sudden and unexpected.

Ague and dengue combined furnished the list with 1,025 patients, the remaining 296 comprised 35 cases of chronic rheumatism and 8 acute. There were 34 admissions for bronchitis, and 18 and 20, respectively, on account of dysentery and diarrhoea. Of the 19 abscesses under treatment, a severe one, most probably caused by caries of one of the vertebrae, was admitted in June. Matter entered the thigh and penetrated below the popliteal space, the parts were laid freely open, but not in time to save their vitality. The parts sloughed and healthy action was established, but purulent deposits kept forming, which called for the interference of the knife from time to time. At first the rectum was supposed to be involved, but careful examination could detect nothing wrong. Two new sinuses exist but they do not communicate. These had stimulating washes injected and the walls were brought together by bandaging. The

patient in the monthly report for December was shortly to proceed on leave to his native country. Change of air, it was believed, would do more good than other measures in Baroda, or treatment of any kind.

Contusion.—Forty-eight cases of contusion occurred.

Syphilis primary and secondary were fortunately rare ; there were but three cases on the list.

Scurvy.—Though but three cases of scurvy, as such were admitted, yet a scorbutic taint is not uncommon among large number of the men. Few rheumatic cases are without signs of scurvy, and it was present as already stated in most of the sepoys affected with dengue.

Conjunctivitis occurred in 29 instances.

Neuralgia was met with in 11. In all these cases including brow ague, I know of no remedy of greater utility than the syrup of the phosphate of iron.

A case of some interest for me at the time may conclude these remarks.

One of the sepoys was brought to hospital in a comatose state on the 7th of March. He appears to have suffered from fever for some days before admission, at which time 7 A.M., the surface was cold ; there was no pulse in either radial, eyes congested. Cold affusion on head and chest was tried, without effect, but by the assiduous use of stimulants, ammonia, arrack, liquor epispasticus to nucha, turpentine enema, consciousness was restored about 8.30 A.M., and the patient was able to answer questions. Toward noon fever set in, the pulse rose to 140, and respiration was upwards of 40 in the minute. Crepitant rhonchus of both lungs and pungent heat of thoracic surface indicated pneumonia, and the patient was in a critical and hopeless state for some days. During the following week the symptoms were typhoid, there was much delirium, the bowels relaxed, the stools were passed unconsciously in bed, tongue dry, except at tip, and edges were covered with a black fur. The treatment was stimulant, and arrack in large quantities was exhibited—the blister which was raised over base of lungs was kept open. On the 15th the tongue appeared to be slowly cleaning, and the patient over night enjoyed 2 hours' consecutive sleep, since then he has made progress and is now convalescent.

Vaccination is carefully attended to : there were 32 operations upon the children in the lines, of these 29 were successful. There was no small-pox among the men ; but two cases were under treatment : one in the infant daughter of a native officer, the other in a son of one of the tent lascars ; both had been vaccinated.

Revaccination was performed in 16 cases but without any result.

Twenty-eight recruits joined during the year, 19 men were invalided, and 11 proceeded on sick certificate to their own country.

Such are the salient points of interest in the medical history of the regiment during the past year. Much sickness prevailed irrespective of the epidemic, for had there been no dengue, the admissions into hospital are still largely in excess of those of the previous year, e.g. in 1871 ; the admissions numbered 514 against 307 in 1872 : the health of the regiment is thus seen to be deteriorating. In such a climate as that of Baroda, the tour of duty should never exceed 2 years. It is hoped that the Rifles when relieved may be sent to a station of acknowledged salubrity.

DETACHMENT H. M.'S 9TH REGIMENT N.I.

DWARKA.—In Medical Charge of 3rd Class Hospital Assistant C. JANNOO ; Strength 89.

The native detachment employed during the year in Okhamandel consisted of a detachment of H. M.'s 9th Regiment N.I. The strength of the above detachment was as follows : 1 European officer, 2 native officers, 86 non-commissioned officers and rank and file. The health of the detachment was very good.

Admissions into hospital for all classes of diseases amounted to 149. The principal diseases have been ague 57, chronic rheumatism 22, secondary syphilis 1, and scurvy 3.

There is also stationed at Dwarka one irregular native police corps belonging to His Highness the Guicowar of Baroda, amounting to 460, commanded by a European officer, also a small body of 59 sowars.

A vaccinator has been employed here by His Highness the Guicowar, and he has been carrying out his duties in a satisfactory manner. The epidemic of cholera has not broken out either in Dwarka or the districts ; but that of small-pox broke out in the city and district during the year, but was not of serious extent.

The water here is generally drawn from wells and tanks. Climate very pleasant, as there is a fresh breeze generally : the rains are mild and the cold season delightful.

The usual sanitary arrangements are not carried out in the city of Dwarka and the principal streets are very dirty in consequence : many drains are upon the surface.

The portion of the lines now used as a hospital is hardly sufficient for the purpose, the ventilation is bad and cannot well be improved, as the rooms on the other side of the walls are occupied by the men of the detachment, and it is not, therefore, possible to obtain a current of air through the rooms.

DETACHMENT H. M.'S 9TH REGIMENT N.I.

SADRA.—In Medical Charge of Apothecary N. CONWAY ; Strength 50.

1. The average strength of the detachments of this corps has been fifty (50). Number treated during the year forty-three (43) ; and discharged cured to duty the same number, 43.

2. The majority of the admissions were cases of fever, of which fifteen were under treatment for that form named dengue. The admissions for this fever commenced the day after arrival of the detachment, in July last, from Ahmedabad. The most distressing symptoms were the severe frontal and lumbar ache, and pains generally with some swelling of the large joints, commonly the wrists, knees, and ankles ; and, invariably, florid or chalky looking condition of tongue, without much thirst, also without striking defect in urinary secretion ; and the fever usually subsided, not as in other fevers, in free diaphoresis. There was also absence of any exanthematous eruption of the skin, and the patients were strikingly relieved after acting on the stomach and bowels freely.

3. There were many cases, I believe, of this disease in the same corps when this detachment left Ahmedabad in July last ; so that having been predisposed to the malady prior to leaving, the night exposure to a cool and moist atmosphere, and day exposure to strong solar light and heat, on the march to this place, sufficed to bring about that change or neurosis of both the cerebral and spinal nervous systems, which caused such altered conditions or *materies morbi* in the blood, which by being pernicious to health caused nature to get rid of them in somewhat similar manner as in acute urticaria ; as it has been noticed that such cases as had vomiting as a symptom before admission into hospital, suffered less or more quickly recovered than those who were not so affected or acted on by treatment. Very few if any of the treated were noticed to suffer from the severe aching and troublesome pains of the joints and bones of extremities ; that usually followed a week or two after recovery from the primary attack in many of the townspeople, chiefly among those of studious habits or addicted to much mental labour or excitement.

4. The temperature of the last hot season has been somewhat greater than that of the previous three or four years. The rains commenced earlier, were lighter, and more fairly distributed among the days of the season ; but the cold weather has been somewhat late in setting in this year. The thermometer's maximum has been, in June, 112° ; minimum, in January, 50° ; and mean 81° in February and December. The fall of rain from the 15th of June to the 16th of September has been about the usual quantity, viz., 31 inches and 86 cents.

5. The water-supply has been plentiful and good from river and wells.

6. The prevailing diseases among the troops and other inhabitants of the camp have been fevers, including dengue, which latter was very common here and in the surrounding villages during the months of May, June, July, and August. The disease commenced in April, and continued up to October.

7. The general sanitary condition of the camp has been very bad during the hot and wet months. The existence of extensive heaps of all kinds of filth allowed to collect were pointed out, and were recommended to be removed along with their sources, the Pagahs of the Guicowar's contingent, if possible. Results of recommendation tolerably good.

DETACHMENT H. M.'S 3RD REGIMENT N.I.

SADRA.—In Medical Charge of Apothecary W. CONWAY ; Strength 48.

The average strength of the detachments of this corps has been 48 ; admissions or number treated during the year 21 ; and discharged cured to duty 21.

2. The sickness during the year among them has been chiefly fevers of the ordinary kind or simple continued and ague, and a few cases of muscular and synovial rheumatism, the after-effects of dengue, from which disease the patients were recovering before leaving Ahmedabad for this station in March last ; so that, for that epidemic disease, there has not been a single admission here during the year from any of the details of this corps.

3. The state of the lines and subsidiary buildings including the hospital and the general sanitary condition of the camp, is tolerably good.

DETACHMENT H. M.'s 9TH REGIMENT N. I.

BURDA CHOWKY.—In Medical Charge 3rd Class Hospital Assistant Lingoo Ashena; Strength 90.

The number remained on the 1st January 3 patients, admitted during the year 292, making the total treated in the hospital 295; discharged well during the year 287; deaths only 1, and there are now remaining under treatment, on the 1st January 1873, 7.

The daily average number of sick during the year has been 9.3.

The following table shows the admissions and the average daily attendance during each month of the year :—

Months.	Admissions.	Average daily attendance.
January	4	2.5
February	9	3.7
March	5	2.4
April	7	1.6
May	7	1.6
June	30	6.2
July	23	8.1
August	44	12.0
September	62	24.0
October	56	20.0
November	30	11.0
December	15	9.0

It will be seen the greater number of admissions took place in the months of June, July August, September, October and November, and the minimum in December; so also the maximum daily average attendance took place in September and October, while the smallest number attended in the month of December.

H. M.'s 25TH REGIMENT N.L.I.

MEHIDPOOR.—In Medical Charge of Assistant Surgeon M. HEFERNAN.

Strength. { Europeans... .. 5
 { Natives 311

The 25th Regiment N.L.I. which had been stationed at Dhoolia since December 1868, marched out of it for Mehidpoor and Augur on the afternoon of the 3rd January of the past year. During the three years that the regiment was stationed at Dhoolia the men suffered severely from ague, and two companies which were detached to Burda Chowky in Kattywar were if anything worse off in the way of climate, and also suffered a great deal from malarial fevers. When the stations of the regiment since 1866 are taken into consideration, it will be no surprise to read that the medical history of the corps should lately show a large amount of malarial fevers. The places alluded to are the Boree Bunder Lines, Bombay, the passes of Abyssinia (during the campaign in that country), Dhoolia and Burda Chowky, and now Mehidpoor.

I mentioned in my report of the regiment for 1871, that the young Mahrattas recruited within the last few years from the Koncan and Deccan suffered a good deal from ague. In the year under review the admissions from ague amongst the same class of men, all of three years' service, have amounted to 206. Government, however, having restricted the recruiting ground of the Bombay Army of this presidency, I believe no other men are obtainable.

The regiment, as before stated, marched out of Dhoolia on the 3rd of January last, and a decided improvement in the health of the men was noticed after a day's halt at Chalisgaum, a place only three marches away from that station. They seem to have shaken off the old liability to fevers, and having performed the rest of the march with comparatively little sickness, arrived at Mehidpoor on the 25th of January with only thirteen men in hospital. During the month of January the greater part of which the regiment was marching, the average strength was 562, and the average daily number of sick 14.25, but the men with slight shoe-bites were not admitted into hospital. A bad case of acute bronchitis, in a man who was suffering from ague, occurred on the march, and the patient was for some time dangerously ill;

but rallied under the administration of stimulants and stimulating expectorants. Ammonia and arrack were freely given.

On the 3rd of February the right half battalion was detached to Augur.

The sickness and mortality in the 25th Regiment at Mehidpoor during the year were both considerable, and the number of admissions into hospital, particularly from ague, very high. The average strength at head-quarters amounted to 311; the total number of admissions into hospital 913; the daily average of sick 23·075; the percentage of admissions to strength 292·60; the percentage of treated to strength 300, of deaths to treated 0·64, and of deaths to strength 1·93. The high rate of mortality was caused by a slight outbreak of cholera in the cantonment during the month of May, June, and July.

Ague has been the prevailing disease during the year, and contributed 546 to the total number of admissions into hospital. The disease occurred chiefly in the rains, and the number of admissions from it increased monthly from thirty-four in July to thirty-five in August, seventy-four in September and to one hundred and twenty-one in October. In the month of November there was a great decrease in the number of ague cases, and only twenty-six men were admitted into hospital for that disease. In August the ague cases were almost all complicated with diarrhoea or chest affections. These complications were plainly traceable to the damp state of the lines at the time, which owing to a rainfall of over seventeen inches was worse than usual. No death occurred in hospital from malarial fever, but eight men were granted sick leave for it.

The prevalence of malarial fever amongst the troops hitherto stationed at Mehidpoor has been so often reported on, and the local causes of malaria so fully described by Dr. Burrows in his report for 1870, that I have only little to add on the subject. During the rains of 1872, I, however, considered the increase of ague in September and October to a certain extent due to the great amount of rank vegetation which sprung up around the native town of Mehidpoor and along the banks of the river and nullah. The portion of the cantonment on which the lines are situated is bounded on the west by the Seepra river, and on the north-east and partly on the south by a nullah that opens into this. The bed of the river is very little lower than this nullah which drains camp and some of the surrounding country, and the consequence is, that after a heavy fall of rain when the former rises it flows into the latter, and swamps a portion of the country along the banks. When the river falls and the water flows off, a certain amount of deposit is left behind, which in drying gives out malaria and furnishes a hotbed for the growth of rank vegetation. Between cantonment and the native town, and around the latter particularly, rank vegetation certainly flourished during the past monsoon.

The faulty position of camp as regards drainage, and the wretched condition and damp state of the lines in the rains have been several times reported on as a source of malaria. The nature of the soil which causes it to retain moisture for a long time, and the presence of a certain amount of jungle, and in the monsoon swampy ground to the south and south-west of the camp have also been brought to notice.

Cholera, which was epidemic in the town of Mehidpoor and in several towns along the road from Khundwa, and which prevailed amongst the workmen on the Indore State Railway and the troops at Mhow, appeared in cantonment in May. During the months of May, June, and July, nine cases of cholera occurred within cantonment limits, and of these five proved fatal and four recovered; six of the patients admitted were sepoy, and of these four died, and the remaining three were followers, two of whom recovered. The prevalence of cholera in the town, which is quite close to camp, accounts for its occurrence in the latter. The usual precautions recommended to prevent the spread of the disease were taken and sentries placed so as to cut off all communication with the native town. In the town the disease was very prevalent and 249 cases were registered, 112 of which proved fatal; but, fortunately, only a few cases occurred amongst the troops. Calomel in ten grain doses, repeated every hour until the evacuations changed colour, and an aromatic stimulant mixture every half an hour, with the external application of heat and friction, was the treatment employed. Suppression of urine when it continued being met by the remedies recommended for that complication. Two circumstances were noticed in connection with these cases which are perhaps worth stating, and they are the large amount of calomel a patient can take without being salivated, and the great rise in temperature which occurred immediately after death.

Seventy cases of rheumatism were treated, and of these sixty-eight were chronic, five muscular, and two acute. The amount of admissions from chronic rheumatism is no criterion of the number of men attacked, as a few (who have since been pensioned) were admitted several times during the year.

Bowel complaints furnished sixty-two cases of admissions into hospital; and of these twenty were for dysentery, twenty-five for diarrhoea, and seventeen for colic. The diarrhoea and dysentery I am inclined to attribute to cold and malaria: ipecacuanha, lead, opium, gallic acid, and quinine, were medicines chiefly used in the treatment of dysentery.

The remaining diseases of the digestive system of any importance, two were of gastritis, four of dyspepsia, five of hæmorrhoids, three of inflammation, and one of abscess of the liver, and four from splenitis. One of the sufferers from gastritis has been pensioned, and the case of abscess of the liver proved fatal. The three cases of hepatitis treated successfully with chloride of ammonia. There was neither diarrhœa nor dysentery complained of at any time in the case of abscess which ran a latent course. It was opened with a trochar, and the patient seemed at first to improve, but large quantities of matter continued to be discharged from time to time, until he died exhausted from suppuration and hectic. Gangrenous spots were appearing about the opening in the side.

There were twenty-one admissions from lung complaints, and of these fifteen were for bronchitis, three for asthma, two for phthisis pulmonalis, and one for pleurisy. The three admissions from asthma were caused by the same man, who has since been pensioned. The phthisis pulmonalis admissions were also caused by one man, who has been discharged the service with a gratuity of four months' pay. He is the man who was mentioned in my last year's report of the regiment, as having suffered severely from hæmoptysis at Dhoolia, and was of about three years' service.

Four cases of measles occurred, and one, which was complicated with inflammation of the bronchial tubes, proved fatal. A case of atonic amaurosis, which I considered was brought on by long suffering from malarial fevers, occurred and the man was pensioned.

A man was pensioned for incontinence of urine, the result of an operation for stone in the bladder.

A case of functional disturbance of the heart's action in which the patient (who was said to be a ganja smoker) was in great distress for about forty hours, was treated with aromatic spirit of ammonia, compound tincture of camphor and spirit of chloroform, of each twenty minims in an ounce of camphor water every hour until the symptoms were relieved.

The remaining cases not noticed were of the usual description common to native troops.

Six deaths occurred in hospital, four from cholera, one from abscess of the liver, and one from measles, complicated with acute inflammation of the bronchial tubes.

Twenty-three men were sent before the Annual Invaliding Committee at Mhow; and thirty were declared unfit, and three sent back said to be fit for further service. The rules regarding the pensions and discharge of worn-out sepoys are the cause of a great many admissions into hospital from doubtful chronic rheumatism. The fact of a man being unable to obtain his pension, except through an invaliding committee, induces many to feign illness when they want their discharge. Again the fact of a man getting the same pension after sixteen years' service as after thirty causes men who have little prospect of promotion, or who wish to leave the service, to come into hospital and complain of chronic rheumatism as soon as they have served the former period.

Forty-four recruits have joined the regiment during the year.

Vaccination has been regularly practiced in the regiment.

The Lines and Subsidiary buildings.—The lines consists of eight rows of huts running north and south, or nearly at right angles to the prevailing winds. They are old, badly constructed, and situated on a site which it is impossible to drain during the rains, and are the cause of much sickness.

Latrines.—The latrine accommodation provided for the regiment is what is known as the Trench-system, and has been carried out in the station since June 1870. A piece of ground about two hundred yards to the leeward of the lines is set apart for them; but during the last rains the male latrines were removed to a spot further away. This was done, as there was a very offensive smell from the place, and the ground was ploughed up and sown with gram. I consider the system objectionable on many grounds, but the chief one is, that it is impossible to compel all the people frequenting the place to use the trench, as many of them, particularly when it is dark, prefer easing themselves all round. In the rains this state of affairs is aggravated at Mehidpoor, owing to the difficulty of getting to the trenches through wet black soil. The matter, I believe, has been fully brought to the notice of the military authorities and permanent latrines suggested.

General Sanitary Conditions.—The general sanitary condition of the cantonment and its vicinity is, except during the rains, very fair. The closeness of the native town is, however, prejudicial to the health of camp, but as the prevailing winds blow from the opposite direction, not to such an extent as might be supposed. This year all the hedges were cut down in camp, and also some trees, which has improved the place very much.

State of the Hospital Buildings.—The hospital accommodation was sufficient for the number of sick during the year, and there are no medical subordinates or hospital servants' quarters, and, as a consequence, these people have to live in the lines.

Dry-earth is used in the hospital latrines; but the urine and water used by the men was carried to rear of the building in chunam gutters, and there allowed to evaporate or sink into the ground until the past year. On the matter being reported, as prejudicial to the health of the cantonment, iron pans were fitted in the rear for the reception of all fluids which flow from the building, and it is now in good order.

The Rainfall and Temperature.—The rainfall during the year was abundant, amounting to 55 inches and 13 cents. The average fall for the last four years has been 39 inches and 67 cents.

The climate of Mehidpoor is, with the exception of the hot months, very pleasant, but owing to considerable fluctuations of temperature which occur, is rather unhealthy for the badly-clothed native. The mean of maximum thermometer inside was 81.8° , the mean of minimum 72.33° , and the mean of the year 76.70° ; in the hospital verandah, mean of maximum thermometer 89° , the mean of minimum 66° , and the mean of the year 77.5° .

Water-supply.—The water-supply is drawn from two wells and from the river. The men were prohibited from drinking the river water during the rains and while cholera prevailed. The quality of the supply is tolerably good.

Prevailing diseases.—Troop and vicinity. Malarial fevers, bowel complaints, and chest affections. A Recommendations made and results. There were no changes of importance, and the erection of permanent latrines was suggested, but not carried out.

DETACHMENT H. M.'S 3RD, 10TH, AND 16TH REGIMENT N.I.

INDORE.—In Medical Charge of Assistant Surgeon F. JONES, M.B.

The following detachment of native troops were stationed at Indore during the year 1872:—

Detachment H. M.'s 3rd Regiment N.I., January 1st to 22nd.

„ 10th „ „ 23rd to 5th March.

„ 16th „ „ N.I., March 6th to 13th September.

„ 10th „ „ N.I., September 14th to 31st December.

The average strength of the troops was 233.

The general health of the troops was very good. The prevailing diseases were—

Ague	...	...	...	...	...	176	admissions.
Dysentery	...	...	...	...	...	31	do.
Diarrhoea	...	...	...	...	...	12	do.
Bronchitis	...	...	...	...	...	12	do.

There was one case of acute mania. No hereditary history of mania could be elicited. One case of ague was of a very severe nature. The patient subsequently died in hospital at Mhow from the ensuing debility. The other cases were of a mild character and do not require any special remark.

Vaccination has been regularly carried on in accordance with Government regulations. I regret that, owing to the very great difficulty in procuring lymph, I have been unable to perform the experiment of re-vaccination, as requested in Inspector General of Hospital's circular No. 3215 of 1872.

The present hospital for the sick of the native detachment is a ward of the Malwa Charitable Hospital. It is capable of accommodating six (6) patients. The medicines have to be compounded and dispensed in the ward, and the medicines are also stored in it. A hospital, which will contain eight (8) beds, for the accommodation of the sick of the native detachment, is in course of erection.

The sanitary condition of the lines is good.

No deaths occurred in hospital. There was one case of suicide in the lines. No reason for the deed could be discovered by the court of inquiry. Death, which was immediate, was caused by a gunshot wound. The ball entered midway between the umbilicus and ensiform cartilage, half an inch to the right of the median line, and passed out at the internal border of the right scapula, about midway between its superior and inferior angles. No *post mortem* was held.

SANITARY REPORT BY THE MEDICAL OFFICER IN CHARGE FOR THE YEAR 1872.

Indore is situated in Malwa on the Grand Trunk road between Bombay and Agra, at an elevation of 1,998 feet above the level of the sea. It is fifteen miles' distance from Mhow, a large military station and the head-quarters of the Division.

The climate is noted for its general coolness and salubrity. The rainfall is somewhat greater than in other stations of Central India. This is probably due to the proximity of the Vendayha range of mountains, and the abundance of trees in the vicinity.

The geological formation of the district consists of trap composed of clinkstones, granular and columnar trap—quartz and felspar have also been found. The soil consists chiefly of rich black alluvial cotton soil : soft, friable red soil and clayey soil also exist.

The country is well wooded and vegetation is luxuriant, particularly after the rains. Vegetables are abundant at all seasons, especially in the cold when cauliflowers, celery, salad, &c., are plentiful. The principal productions are opium, cotton, sugar, grain, and dyes.

Fever is due to the luxuriant vegetation. Lung affections the result of the changes in temperature. Syphilis is accounted for by the demoralized condition of the native city. Rheumatic affections are due to the changes in temperature. There were several cases of cholera amongst the natives of the bazar; but no case occurred amongst the troops of the native detachment. Dengue was rumoured to be very prevalent in the native city, but I have not been able to confirm the report, although I several times visited the city for this purpose. No case of dengue occurred within the cantonment limits.

The lines occupied by the natives troops are situated about two miles from the native city. They consist of five rows of huts well built, of unburnt bricks with tiled roofs. They are capable of accommodating upwards of two hundred men. The houses for the native officers are six in number, and are situated to the left(west) of the men's lines, and are built of burnt bricks.

The latrines for the men and women are situated to the right(east) of the lines at a convenient distance. Those for the men accommodate nineteen persons and those for the women eight. The latrines for the native officers are situated to the west of their own houses, and at a short distance from them.

The lines, although built on somewhat low ground, are well situated, and the drainage is good.

The water-supply is obtained from two large wells in the immediate vicinity of the lines. It is plentiful and of good quality.

The average strength of the native troops during the year was 233.

The number of admissions into hospital during the year was three hundred and fifty-two, of which the following were the principal causes for admission :—

Ague	...	...	...	...	...	...	176
Dysentery...	...	...	...	...	...	...	21
Diarrhœa	...	...	...	...	...	...	12
Bronchitis...	...	...	...	...	...	...	12

There was one case of acute mania. The other cases were of a trivial nature, such as boil shoe-bite. One case of fever intermittent was of a severe character. The patient subsequently died in hospital at Mhow from the ensuing debility.

The hospital for the sick of the native detachment is a ward of the Malwa Charitable Hospital and forms the east end of the main block of that building. It is capable of accommodating six patients. There is no dispensary or compounding-room—medicines, &c., have to be compounded in the ward. The hospital medicines are also stored in it. A latrine for the use of the sick is situated at a short distance from the ward. It has accommodation for four persons.

A hospital, with the necessary out-offices, is being built for the sick of the native detachment. It is situated at a short distance from the lines in a north-westerly direction. There will be room for eight beds in it. The soil being very deep (forty feet) in the place selected for the site of hospital, the foundations are laid upon piles.

A hut containing five rooms has been built in the compound of the Malwa Charitable Hospital for the accommodation of the sick of that institution.

A new travellers' bungalow has been built on the high road between the Residency and Agra.

Opposite the travellers' bungalow a hospital for Europeans and Eurasians has been built.

On the Agra road a bungalow for any residents in the station has been built, and another for the same purpose is in course of erection.

REPORT BY THE DEPUTY INSPECTOR GENERAL OF HOSPITALS, NORTHERN AND
MHOW DIVISIONS, 1872.

A review on the sanitary state of our Indian native troops, is a thing apart from that of the European element with which I have served in this land; climate exercises its modified influence on each constitution—habits, &c., are at variance; the one self-fed and thrifty, inadequate at times and when a family man, at others some special object is in contemplation; the other by the State, largely on meats, &c., and stimulating drinks, hence the more frequent organic diseases and fatality in the latter by comparison: indeed, in reporting on the former, we may almost confine our remarks to the three or four diseases chiefly constituting, or adding largely to the swelling up, the annual records of admissions, deaths, and invalids.

2. These I shall deal with separately; and firstly fevers.

3. They hold the most prominent position among the admissions into all hospitals, and are generally, though improperly I conceive, attributed to what is termed local malaria; in the same manner that an undiagnosed case is entered under the head of Dyspepsia, a very convenient disease indeed. Local malaria would seem to have its location in all military cantonments, notwithstanding the unwearying efforts of commanding and staff officers to combat with the insidious will-o'-the-wisp, if we are to give heed to regimental and other returns *in re*.

4. Fevers are rife, and average of sick greater, where ranges in temperature reach their culminating points; nor do they prevail usually in the summer or hot season, unless heavy cold dews obtain at night.

5. The two most prominent types are remittent and intermittent; the former affecting indirectly the circulating system positively, the latter negatively—the one from exposure to the sun's rays during the day, the other from reflected cold and moisture towards evening and at night, in damp localities; and this is what is vaguely termed local malaria, a subtle, imaginary something, incapable of analysis, and of which we absolutely know nothing.

6. The above remarks have been made mindful during my late tour of 3½ months' duration through the chief portion of the Northern and entire Mhow Divisions of the Army, in the recent cold season, and from perusal, subsequently, from opinions of the several medical officers. Yet of the numerous cases of fever I saw—and I saw, by comparison, but few other diseases—many might have been classed as ephemeral, the cause, probably, from sudden alternations in temperature, affecting primarily the capillary circulation, and on such, I fear, a very large amount of quinine is unnecessarily expended annually, but this wholesale expenditure, in consultation with the several medical officers, I have endeavoured to suppress; since more simple and inexpensive country remedies are equally efficient.

7. In calculating the statistics under head of fever and other simpler diseases to be found in the wards of a native hospital during the autumnal season, and when the cooler weather is setting in, we must not omit to remember that at this season the drill commences and many shirk this extra duty.

8. This epidemic is a fever resulting from excessive primary neuralgic irritation, affecting the tendinous origins and insertions of certain muscles in the vicinity of joints, and secondarily the muscles themselves, and had its wave origin in this presidency, at Aden in Arabia, commencing in the last week of June 1871; and of this outbreak my opinions have been recorded and published during my administrative duties as Medical Superintendent of the Garrison; since which it has nearly passed through the length and breadth of our Indian possessions, laying prostrate for a long period $\frac{8}{10}$ ths of the fighting manhood of England and her native army: and, without doubt, its peculiarly exhaustive enervating effects propitiated the advent of another wave of which or from whence—as with the Burdwan epidemic—we wot not; yet it was recorded as fever of a severe type, prevailing in all arms throughout Guzerat and Mhow Divisions in the months of September and October 1872.

9. In the native arm this class of disease is usually second on the list in reference to numbers: "hath paung dukhta," are well known to medical officers of the Indian Service, also "cumber dukhta," as favourites with the sepoy—more especially a few months prior to the invaliding season, when men, holding no chance for promotion get as good a pension as in after years, resort to every kind of stratagem, even to half starving. In such—and there are many instances I fear—it is hard to tell who fares the worst, the patient or doctor, since the one is troubled in body by successions of blisters and daily potations of colchicum, iodine, &c.—*vide* summaries of treatment at invaliding boards—whilst the other is puzzled in mind what to do in order to get rid of his troublesome patients; the finale, probably, in consultation with the adjutant and commanding officer—a resort to the invaliding board.

10. Since writing the above I have observed certain remarks on this subject from the Medical Officer at Mehidpoor, Dr. Heffernan.

11. On such cases, I do believe, many valuable medicines are expended without a corresponding valuable result; nor does it appear to me that the less expensive hypodermic treatment, so safe and yet so effective where rheumatic or neuralgic affections *do really* exist, is sufficiently or so frequently resorted to as might be, since the blebs and ulceration following such operations are not caused by the fluid "prophylactic," but chiefly from irritation arising from forced puncture with blunt instruments or clumsiness.

12. I have never observed bad results, nor do I use these delicate instruments as issued from the Government Stores, preferring my own private ones, which enter as readily as a lancet manufactured by a first class artizan.

13. I have seen very good results in these cases by the injection both of morphia and atrophine, though I prefer the latter in neuralgia.

14. Bronchitis and asthma are the more prominent of these among natives, and, Diseases of the respira- although some cases are to a certain extent feigned, the stethoscope is tory organs. the great detector in "stage coughs."

15. This disease, in former years productive of great loss in all arms of the service, is at Syphilis. a minimum now, thanks to the establishment of lock hospitals and improved official scrutiny; consequently, I shall not dwell on the records from medical officers in change of regiments—these being satisfactory.

16. Hepatic lesions and, what I believe are concomitant, diarrhœa and dysentery, are Other Diseases. small in number by comparison with others above enumerated: these will be recorded in the returns hereafter, and few are of great severity.

17. In most of the stations within these two divisions a very goodly show of vegetables Scurvy. appeared in the bazars on my tour of inspection; yet scurvy is reported as occurring during the hot seasons from diminution of such anti-scorbutics, and this offers a fine field for the malingerer, anxious to get to his friends for three or six months on sick leave.

18. During the nine years of incumbency as Superintendent, Medical Department at Aden, where good vegetables do not abound even in the cold season, this disease, in its extreme, was of a most malignant type during the former years, especially in regiments of one year's service, the men preferring to hoard their pay, but by judicious recommendations from medical officers and the staff, they were induced to treat themselves, in subsequent years, with limes or any extra vegetables obtainable, in addition to the free rations supplied by the State at this special station. And this had its good result, since extreme cases from the lines were afterwards rare, and usually cured or benefited by the common scurvy-mixture—rum, limejuice, sugar, infus. cheretta—out of hospital. In short, during my latter years of administration, this disease was met with only in the milder form; and at the island of Perim, where pumpkins of a dry character, un nourishing, were the almost sole vegetable ration—an outpost where formerly men died, and were brought to Aden dying. The introduction of kokum and currystuff, with a daily supply of limejuice, reduced this disease to a minimum before I left Aden, nor do I think the average of scurvy cases sent to India for change, consequent on this disease, from regiments there stationed, is much above others from up-country garrisons within this presidency. I flatter myself I have seen more of this affection, both in European and native, than has fallen to the lot of many. It is a dietetic disease, and must be met by dieting. Physicking is injurious, save to alleviate excessive diarrhœa when occurring.

Alimentary canal. 19. Diseases of the alimentary canal are apparently numerous as usual, but chiefly mild, not requiring much comment.

20. Cases of *coup-de-soleil* and heat-apoplexy have not been numerous; the distinctive Coup-de-soleil and heat- origin is, in the former, the sun's rays directly affecting the brain and apoplexy. nervous system; whilst in the latter disease, (and I have treated many at Aden from among British seamen on board Collier merchant vessels, engineers, and stokers) a heated sultry atmosphere, the autopsies showing congestion of the lungs—asphyxia in fact—owing to the supply of air being cut off, the unchanged venous blood of the pulmonary artery passes into the minute radicles of the pulmonary veins, but their peculiar excitability requiring arterial blood to excite them, stagnation takes place in the pulmonary radicles, and death occurs chiefly from this cause—not owing to venous blood being distributed through the system and "poisoning" it, as was the idea of Bichat.

21. This dreaded disease is reported as having occurred at Neemuch, Mehidpoor, Augur, Cholera. and Mhow—contiguous stations—and from the last pertinent remarks are made, as to the mode of its origin and invasion, by Surgeons Major Murray, H. M.'s 10th Regiment N. I., and Thorold, Staff, also Surgeon Riddell, H. M.'s

16th Regiment N. I., who, by the way, has been led into error in reporting in his annual, five deaths, whilst one only of his regiment died in hospital, the remaining four being on their way to join another regiment, were treated at the cholera hospital beyond the cordon; yet, the disease did not amount to an epidemic in any station, and admissions by comparison to populations—European and native—were very few, though the percentage of cures was large for *malignant* cholera.

22. The system of a cordon during such invasions is a good institution, and must not be neglected, as it allays the fears of the timid who view the action in the light of a safeguard; it is in fact a moral good, meeting also approbation from high military and civil authorities from whom rewards for zeal emanate; but to tell me that cholera, as it appeared at Kurrachee in the year 1846, could have been kept out by any quantity of such cordons, is to trifle with my sanity; as well try to keep out a good stiff north-wester by similar means or measures.

23. It does not appear in the records of the abovenamed medical officers that any persons forming the cordon or hospital establishment were overtaken by the *contagions*.

24. In 1846, when I was serving in Sind, 80 men of H. M.'s 86th Regiment, Royal County Downs, were buried in one day, yet not the result of *contagion* but atmospheric infection, and the total loss to this regiment, during a period of 6 weeks, was, if I remember rightly, between 2 and 300.

25. Depend upon it when cholera does appear in a *malignant* form, the sooner flight is resorted to the better, and in a direction far away from the course the wave is taking.

26. Experts (sanatory officials) too frequently look to the terrestrial for cause and effect, yet, if they took a higher flight celestial-wise and studied the varied atmospheric changes and the effects of such on man, they would be nearer the mark than now, where all is darkness respecting this frightful bane to men.

27. I am not aware if it be generally known that outbreaks from cholera "*vera*" occur during what is called the "small hours"—midnight till 2 A.M.—when a close sultry and telluric atmosphere gives way to a cold breeze; and this peculiarity, if carefully watched and recorded, may be of value. It was noted by me in both invasions at Aden in 1865 and 1867, the report of which is in the office archives of the Inspector General, Indian Medical Department; and the fact was announced in a special report at the sittings of the Constantinople Conference. Such future observations, if correct, would tend to substantiate the wave theory I have so long endeavoured to enunciate.

28. A few cases from this disease and measles have been recorded among the families in the lines and bazars chiefly, but such is not unusual, and the circumstance may be passed over without further comment.

Small-pox.

Vaccination.

29. This has been carried on very generally and satisfactorily throughout the Northern and Mhow Divisions.

30. Save at Nasirabad (where there are two—one for native cavalry the other for native infantry and staff—where these are built of stone with stone

Hospitals.

flooring, on a grand scale, after a new design, are unfitted, in my opinion, for sick of native regiments, being cold and cheerless during the winter months—all doors and windows—and the latter nearly on a level with the sick men's cots; ventilators in every available direction, and many, from their capacity, capable of receiving a thermantidote or wind-sail) nearly all these are of the old pattern, and open to the same objections with reference to redundancy in ventilation.

31. Fancy the result in diseases of the air passages and others of the lungs in men scantily clad, being taken suddenly from their warm huts, the only opening in these small doors, with apertures in their single-tiled roofs for exit of smoke, &c., and placed in a large ward with a cold breeze blowing over them from all sides without a chance of escape—thermometer at 27° F., as I have known it during my tour, with no means for heating the wards, at this season, being available—verily this is ventilation with a vengeance! But is such treatment either right or judicious: and what would our great physicians at home and abroad have to say to it?

32. There is scarcely a hospital, save the Nasirabad referred to above, fitted with appropriate rooms for particular cases: all diseases are treated in one or two long, dreary wards, the bronchial—coughing, wheezing, snuffing, and loudly expectorating—is a close neighbour to the fever case, perhaps just relieved from a severe paroxysm, and hopelessly endeavouring to find repose in balmy sleep. Surely such things are not of private circles when life or death hangs upon a temporary calm being obtained.

33. I have an idea that hospitals for native regiments should be on the *serriæ* plan—enclosed; a tree, if possible, in the open space, with wards to hold not more than four single and others for married men—one or two patients—and where their wives could call and nurse them, since native women usually avoid too great publicity in domestic matters.

34. The trial of asphalte for flooring the civil hospital at Aden has been sanctioned by Government, and doubtless a favourable result will accrue; if so, the material should be introduced generally into all hospitals—European and native—where white ants are found, extended three feet upon the walls, which latter will avoid unsightly expectorations, &c.

35. I do not hold with the usual cry of “bad lines for the sepoy” provided by Government; since in the majority of these men, it was harder lines in their own gaums in this respect before enlistment I presume.

Sepoy lines.

36. With few exceptions, and these have been the subject of complaint and should meet with early response, the several arms of the service are very comfortably lodged in cabins suited to their wants and habits, and no complaints reached me when inspecting; and I may add I was satisfied also.

37. The sepoy desires a dark dwelling, it is his privacy; and he would seem to have a soul above ventilation; and so long as the smoke passes through the projecting gables and roof of his hut he is as contented as the Irishman in his peat-smoky cabin, with his family and pigs, and quite as healthy.

38. It is usual with medical officers to complain of the effect of certain climates after a residence of three years at a station; but I think it will be found that regiments during the first year of arrival suffer more than in after years, owing naturally to acclimatization or mutual accommodation. This was my experience at Aden.

Climate in regard to health or otherwise of regiments.

39. In some distant stations native regiments are reported to improve in *physique* by length of service; at others, not favourites, complaints are rife, through medical officers' reports and the press, from periods of arrival till departure; yet we seldom hear of such from Poona, Nagar, Belgaum, or others adjacent; nor are differences of opinion infrequent among medical officers in the same cantonments, in reference to healthy status, water-supply, &c.

40. With regard to the effect of this at different stations on the *physique* of men, I lean to the belief that the thermometer is too frequently resorted to as a guide, since in some the atmosphere is dry, and, consequently, affects the instruments more readily than in humid climes, though in the latter the system suffers largely by enervation, and, consequently, becomes more liable to disease.

Temperature.

41. I am no great admirer of, nor believer in, the excellence of the Sanitary Department, and its recent introduction of Trench privies for sepoys and their families, have not changed my views.

Conservancy.

42. The old system of pans and dry-earth, in properly built buildings, these last at no small expense to the State, was considered an effective one; the present is filthy, immoral, and degrading, at least in the system I saw adopted during my tour, and reverses the origin of the nomenclature—privacy.

43. I put it to sanitary commissioners how they would like their families to be subject to such a system.

44. In garrisons like Aden and Sind, where the rainfalls—save at times—are scant and irregular, such a system, if properly carried out, may answer, but not without a *special* establishment even at these.

45. The Chinese, the best cultivators in the world, are far beyond us in the utilizing of human *effete*; but they remove all such deposits quickly, following their objects with a basket, as native women and children do herds; only the former are the servants of contractors who convert all such collections into a liquid, and by this method their lands are manured.

46. The odour is not at first pleasant, yet this rapidly wears off, and the result fine crops.

47. I am not sure that the celebrated Mahabuleshwer potatoes and delicious strawberries which visitors delight to revel in, are not so treated by the Chinese tillers of the soil at that charming retreat, available alone to the few.

Special hospitals.

Lock.

48. These should have been placed last on the list when dwelling on hospitals in general; yet I could not stay progress in my general report, being already late, by reason of the non-receipt of the Ahmedabad report which reached this office on the last day of February.

49. The only approach to an appropriate hospital of this description within the two divisions is confined to Mhow, and the report of Dr. Thorold is complete.

50. The other hospitals are make-shifts and the establishments not so complete; and the chief difficulty in carrying out the Contagious Disease Act appears in the want of unity between the civil and military authorities.

51. Half measures are useless; the work must be done by one independent medical officer with magisterial powers, where large cities and cantonments exist in vicinity; nevertheless, what has been done well, and the disease has, to a considerable amount, decreased amongst all arms of the service.

52. I would suggest a committee on the Mhow Lock Hospital, and if approved of this should form the design for all buildings in the future. It is on the *serrai* plan.

53. I would suggest for consideration a general or civil hospital for Mhow, unless the Government accept the liberal offer made by Mr. Pestonjee Dorabjee, the philanthropic founder of the Dorabjee Dispensary at that station.

54. *Ahmedabad*.—Is compactly laid out, fairly wooded, and clean. Water-supply from wells and reported good. A voluminous account is given by Dr. Boustead, both of this and the ancient city, which is on too large a scale to be embodied in a report of this nature. A very correct map also accompanies Dr. Boustead's annual report on H. M.'s 9th Regiment N. I., which I consider both interesting and satisfactory, entering as it does on all matters of note.

55. *Deesa*.—Large, sandy and straggling, fairly wooded, intersected by numerous nullahs, the resort of waifs and strays, otherwise clean. It is, however, a heart-rending cantonment by reason of deficiency in roads and water-supply for these.

56. A very interesting and carefully prepared *precis* from Assistant Surgeon Barry, M.D., H. M.'s 2nd Light Cavalry, will be found in this officer's annual report.

57. *Nasirabad*.—A fine, open camp, fairly wooded; a large amount of young trees have, of late, been planted along the roads which, in a few years, will prove a great *desideratum*. It is very clean and has several gardens. Water, chiefly for drinking purposes, brought in from a distance of about three miles and reported good. Well-water brackish.

58. The report called for relative to the new tank for receiving rain-water for the European troops at this station cannot be given. I examined the excavation twice in company with the Brigadier-General and Cantonment Magistrate; but, this being chaos at the time, could obtain no information as to its future value when completed, and am powerless to advance any of my own.

59. This station has been recorded as being very healthy during the year. The reports from the medical officers in charge of 3rd Light Cavalry, 23rd Regiment N. I., and Staff are very meagre.

60. *Neemuch*.—A very pretty, well wooded, compact station, and like the others clean. Young trees are here also, as at Nasirabad, being largely planted about the neighbourhood of the new European barracks, which latter, at present, look cheerless on their barren site.

61. The water-supply is good, and from wells, save in the hot months, when the large water receiving nullah, which aids in supplying these, dries up.

62. At the south-west, and in rear of the European barracks, upwards of a quarter of a mile distant, I observed the remains of a considerable lake, but by reason of a portion of the stone bund having been carried away by the floods, the water-supply from this source is rapidly carried off; yet, if this were repaired, am of opinion the wells, many of them, would be largely fed during the hot season or greater portion of it, without prejudice or detriment to the sanitary state of the cantonment.

63. Tree plantations, not overcrowding nor too low, are essential in all cantonments, and to support life to these, water is necessary.

64. On some the sight of water near European barracks acts as on the rabid animal.

65. There is nothing of either import or interest in the annual reports from this station.

66. The sepoy's huts are reported too small, and incapable of admitting a charpoy; consequently the men have to lie on the ground, which is reported very low.

67. *Mehidpoor*.—A black soil cantonment. The river Sepree affords the chief water-supply, forming western, whilst on its eastern and northern boundaries runs a deep nullah.

68. Both these feed the wells, and are not objectionable in a sanitary point I conceive during the hot season; but from the nature of the soil during the rains everywhere is swamp—vegetation prolific; yet such is disposed of by constant cutting down and grazing, and is not a source of what is termed *malaria*—cold and damp it certainly is.

69. The mens' huts are partly in ruins, and said to be very damp in the rains. They are built on low ground and should be removed.

70. There is nothing of interest in the reports from this cantonment, which is garrisoned by 362 men of the 25th Regiment N.I.

71. Passing from Mehidpoor to Augur I saw ice of half inch in thickness.

72. *Augur*.—A pretty undulating station, red soil, trees abundant, water from wells good all the year.

73. There are two tanks in vicinity with cantonment: one reported noisome in the hot season, nevertheless the station is classed as very healthy, and the tank remains unmolested, so much for "*malaria*."

74. A wing only of a native regiment is located here from the Bombay service, and its sick are treated in tents pending the completion of a new hospital, the site of which is very good, being on the most rising ground in cantonment, yet a little too far from the lines I think.

75. Nothing for comment from the report of the medical officer.

76. *Indore*.—A small unique cantonment, with a garrison of about 260 sepoys, H. M.'s 10th Regiment N. I., relieved occasionally.

77. The soil is cotton chiefly, and, as at Mehidpoor, deeply fissured in the hot season, and swampy in the rains.

78. At the north-west boundary is a river which flows all the year round, useful and ornamental.

79. The water-supply is from wells, pronounced good all the year round.

80. The sick are treated in a small ward lent by the medical officer in charge of civil hospital, and under same roof, very small and inconvenient; however, a hospital is in progress towards completion.

81. The reports as to the sanitary condition of the station are favourable, but I find nothing novel after perusal of the annual report of the medical officer, worthy of remark.

82. *Mhow*.—This station is the strongest garrisoned cantonment I have seen within my two divisions, and much as I left it nine years ago, save that the cavalry barracks and European infantry hospital, then advancing towards completion, are now in occupation; and the former, though facing easterly, are on a more elevated position than the old buildings, where, during the rains, a black swampy soil existed, with but small attempt at drainage: yet one to effect this latter has been lately made, but the site is still defective, and here, in the vicinity, on a slight elevation, are the huts for two native regiments, also the hospital, a bomb-proof building, with two wards, one for sick of each regiment, and capable of containing but 14 beds, unequal to the requirements of a strength of upwards of 600 fighting men. Officers' quarters are also here.

83. I mind me of a time that is gone, then in charge of royal artillery, when I wrote very unmistakeably on the unfavourable sanitary condition of this part of the cantonment, and have no disposition, after a lapse of nine years, to change my views. It should be deserted as a site at once.

84. The reports from this station are admirably condensed, and will be perused with interest.

85. *Baroda*.—This station for many years bore an evil repute as being the focus where fevers held supreme sway, and the annual returns showed its character was not maligned during the extremely hot season, and the Medical Officer 4th Rifles N. I., Dr. Ross, still reports unfavourably of the autumnal months.

86. Water-supply good, and from wells.

87. The lines of the men are very rickety I confess, and should be re-built.

88. This is the most charmingly wooded station I have visited, and on entering, at first glance reminds one of the glorious domains surrounding ancestral halls in old England, alas! there are none such dwellings here, for on further inspection the bungalows appropriated for officers, with but few exceptions, are very inferior.

89. Several trees, where overcrowded and obstructing the influx of pure air, have been removed, and orders have been issued for further cutting down of others in compounds and lopping off the low hanging branches to a height of 16 feet for a similar object; and this, doubtless, will prove beneficial, since I cannot imagine, beyond excessive radiation of cold from such redundant arborescence, any other cause for fevers in this beautiful cantonment.

90. The report from the medical officer, Dr. Ross, is very interesting, especially with reference to dengue.

Stations I have not visited.

91. *Bhooj*.—H. M.'s 20th Regiment N.I., camp clean, water good, trees scanty, yet a number of young ones have lately been planted and improvements in roads are recorded. The lines, as in all reports, faulty; the first two-thirds of the year the regiment healthy, last third suffered from fever of a most debilitating character, perhaps simulating dengue, as the latter disease was subsequently diagnosed in 11 cases only.

92. *Rajkote*.—H. N.'s 18th Regiment N. I., in the opinion of the medical officer, suffered from extreme fever by reason of hard work and exposure in building huts; but in the autumn months fevers, &c., are everywhere rife, when the ranges in thermometer are great.

93. There is a postscript to Dr. Sexton's remarks on memorandum from Army Sanitary Commissioner *in re* malaria, which will be read with interest; yet this officer does not mention in what direction his sepoy lines lie from the dirty city, and if to wind or leeward.

94. Squadron H. M.'s 2nd Light Cavalry.—In this report appears nothing of further interest. Water and lines good, men healthy by comparison with H. M.'s 18th Regiment N. I.; but a detachment of 51 men of the regiment were on service with the Political Agent for two months, which doubtless improved its status.

95. 2nd Company Native Artillery.—Inspected this company at Aden just prior to its departure and reported favourably on its status, though, like all other corps, the men had suffered largely from dengue during the outbreak there in 1871. The report from Dr. Sexton is favourable for the year 1872.

96. Nothing further to say.

97. *Dwarka*.—Detachment H. M.'s 9th Regiment N. I.—Nothing salient attaches to this report. The usual numbers from fevers, rheumatism, &c., appear; water good; vaccination carried on in a satisfactory manner.

98. I have read the reports of medical officers in both divisions with attention and profit, and have been guided in some measure by these. I have taken the views, opinions, and experience of cantonment magistrates and others of long residence, also, at all stations, and have prolonged my visits at these in order to become personally acquainted with their wants and requirements, and the deductions drawn are now submitted.

99. I have not entered on statistics: these are subject to grave errors at times, and I should be sorely vexed and bewildered, in the matter of the number of intermittent fever cases, were an attempt made, so shall leave medical officers on the spot to tell their own tales for which they alone are responsible.

100. I am answerable alone for my own opinions based on long experience albeit among Europeans.

101. I have great pleasure in bringing to special notice of Inspector General the very able reports that have reached me from—

Surgeon-Major Murray, H. M.'s 10th N.L.I., Mhow.

„ Thorold, Staff and Lock Hospital, Mhow.

„ Ross, H. M.'s 4th Rifles N.I., Baroda.

„ Boustead, H. M.'s 9th Regiment N.I., Staff and Lock Hospital, Ahmedabad.

Assistant Surgeon Barry, M.D., H. M.'s 2nd Light Cavalry, Deesa.

102. In conclusion I trust to favourable consideration from Inspector General in the matter of delay in this report, since my final inspection (after wandering through both divisions, formerly the labour of two deputies, extending over a space of some 1,500 miles, chiefly cart tracks—sandy and rocky—and with but little railway aid) was on the 24th February, and the last annual return, in order for completion, reached my office on the 28th February only. I had also the misfortune to lose my head clerk by death whilst away, a man who had served with great credit in this office 24 years, and no substitute available at the time.

103. I have to thank Dr. Wyllie for his inordinate exertions during this troubled period—fortunately his talents are of no mean order; yet former experience and recent action have proved his tact and ability in matters of responsibility, even though almost overwhelmed by plurality of charges his own.

[Statement.]

ANNUAL RETURN of Sick of Native Troops in the Northern and Malwa Divisions for the year ending 31st December 1871.

		Strength.		Remained.	Admitted.	Total.	Discharged.	Died.	Remaining	Total.	Percentage.			1871.	
		Europeans.	Natives.								to Treated Strength.	to Deaths Strength.	to Deaths Treated.	Admissions.	Casualties.
Ahmedabad	8th Regiment N. I.	6	613	28	1,360	1,388	1,334	9	45	1,388	226.4	1.5	0.6	F. ...	
	9th Regiment N. I.	7	636	18	421	439	423	4	12	439	69.0	0.6	0.9	F. ...	
	* 1st Company A.	2	121	5	151	156	149	1	6	156	128.9	0.8	0.6	... ..
Deesa	2nd Regiment L. C.	6	275	5	191	196	189	3	4	196	71.2	1.0	1.5	F. F.	
	24th Regiment N. I.	7	623	17	643	660	633	9	18	660	105.9	1.4	1.3	F. F.	
Baroda	4th Regiment N. I.	9	650	24	514	538	519	3	16	538	82.7	0.4	0.5	F. ...	
Rajkot	18th Regiment N. I.	8	627	12	828	840	819	7	14	840	133.8	1.1	0.8	F. ...	
	Squadron 2nd L. C.	1	118	2	135	137	133	2	2	137	116.1	1.6	1.4	... ..
Bhoj	20th Regiment N. I.	8	643	49	523	572	540	8	24	572	88.9	1.2	1.4	F. ...	
Dwarka	Detachment 6th N. I.	...	90	4	105	109	106	...	3	109	121.1	...	...	} F. ...	
	Detachment 9th N. I.	...	90	...	23	23	19	...	4	23	25.5	...	...
Burda Chowky	Detachment 6th N. I.*	...	...	...	...	...	...	...	...	...	...	...	...	...
	Detachment 9th N. I.	...	135	...	28	28	25	...	3	28	20.7	...	...	F. F.	
Sadra	Detachment 6th N. I.	...	45	...	7	7	7	...	...	7	15.5	...	...	} F. ...	
	Detachment 9th N. I.	...	42	...	6	6	5	...	1	6	14.2	...	...
	Detachment 8th N. I.	...	48	...	35	35	35	...	...	35	72.9	...	...
Mhow	3rd Regiment N. I.	5	536	19	716	735	707	7	21	735	137.1	1.3	0.9	F. F.	
Indore	Detachment 3rd N. I.	1	115	2	121	123	116	...	7	123	106.8	...	...	F. ..	
Mehidpur	15th Regiment N. I.	5	357	7	859	866	850	7	9	866	242.5	1.9	0.8	F. F.	
Neemuch	3rd Regiment N. I.	5	271	19	327	346	331	2	13	346	127.9	0.7	0.6	F. ...	
	22nd Regiment N. I.	7	621	22	1,047	1,069	985	2	82	1,069	172.1	0.3	0.2	F. F.	
Nasirabad	26th Regiment N. I.	6	615	51	1,693	1,744	1,714	11	19	1,744	383.6	1.8	0.6	F. ...	
	Squadron 3rd L. C.	1	157	...	332	332	322	...	10	332	211.4	...	...	... F.	
Total.....		84	7,428	284	10,065	10,349	9,961	75	313	10,349	139.4	1.0	0.7		

* Return not received.

The red ink lines show the contrasts in sickness

*ANNUAL RETURN of Sick of Native Troops in the Northern and Malwa Divisions for the year ending
31st December 1872.*

1872.			Strength.		Remained.	Admitted	Total.	Discharged.	Died.	Remaining.	Total.	Percentage.			
Admissions.	Casualties.		Europeans.	Natives.								to Treated Strength.	to Deaths Strength.	to Deaths Treated.	
...	F	Ahmedabad.....	3rd Regiment N. I.	7	609	21	1,494	1,515	1,498	5	12	1,515	248.7	0.8	0.3
	F.		9th Regiment N. I.	5	472	12	650	662	656	3	3	662	140.2	0.6	0.4
...	...	Deesa	2nd Regiment L. C.	6	301	4	634	638	620	4	14	638	211.9	1.3	0.6
...	...		24th Regiment N. I.	6	619	18	2,086	2,104	2,069	12	23	2,104	339.9	1.9	0.5
...	F	Baroda.....	4th Regiment N. I.	6	644	16	1,305	1,321	1,306	1	14	1,321	205.1	0.1	...
...	F	Rajkot	18th Regiment N. I.	6	619	14	947	961	927	3	31	961	155.2	0.4	0.3
F.	F.		Squadron 2nd L. C.	1	118	2	96	98	97	...	1	98	83.0	...	...
F.	...		*2nd Company N. A.	3	122	...	111	111	108	1	2	111	90.9	0.8	0.9
...	F	Bhoj	20th Regiment N. I.	7	630	24	923	947	897	2	48	947	150.3	0.3	0.2
...	F	Dwarka	Detachment 9th N. I.	1	89	4	149	153	148	...	5	153	171.9	...	...
...	...	Burda Chowky...	Detachment 9th N. I.	...	90	3	292	295	287	1	7	295	327.7	1.1	0.3
...	...	Sadra	Detachment 3rd N. I.	...	48	...	21	21	21	...	...	21	43.7	...	...
...	...		Detachment 9th N. I.	...	50	1	42	43	43	...	...	43	86.0	...	...
...	...	Mhow	10th Regiment N. I.	5	494	15	881	896	876	3	17	896	181.3	0.6	0.3
...	...		16th Regiment N. I.	8	646	9	917	926	891	12	23	926	143.3	1.8	1.3
...	...	Indore	Native Detail	2	233	15	352	367	364	...	3	367	157.5	...	...
...	F	Mehidpur	25th Regiment N. I.	5	311	23	910	933	912	6	15	933	300.0	1.9	0.6
...	...	Augur	R. W. 25th N. I.	3	248	...	288	288	279	1	8	288	116.1	0.4	0.3
...	F	Neemuch	3rd Regiment L. C.	5	309	13	387	400	381	1	18	400	129.4	0.3	0.2
...	...		22nd Regiment N. I.	6	638	82	1,163	1,245	1,186	6	53	1,245	195.1	0.9	0.5
...	F	Nasirabad	23rd Regiment N. I.	8	626	34	1,891	1,925	1,861	6	58	1,925	307.5	0.9	0.3
F.	...		Squadron 3rd L. C.	1	133	10	196	206	204	1	1	206	154.8	0.7	0.4
Total.				91	8,049	320	15,735	16,055	15,631	68	356	16,055	199.4	0.8	0.4

during 1871 and 1872, F shows for in favor.

SIND DISTRICT.

Average strength present during the year	...	...	2975.
Average daily sick per cent. to the average strength	...	...	4.95.
Ratio of mortality per cent. to the average strength	...	...	2.48.

H. M.'s 27TH REGIMENT N.L.I.

KURRACHEE.—In Medical Charge of Assistant Surgeon W. NOLAN, M.D; Strength 668.

H. M.'s 1st Belooch Regiment was stationed at Kurrachee during the year 1872.

The health of the regiment during this period, if the epidemic of dengue be left out of consideration, was on the whole good, the number of admissions from all causes having been 573 against 460, 501, 667, 749 and 495 in the five preceding years, but, by the addition of the admissions from dengue, the total number reaches to 985.

The principal diseases in point of frequency are as follows:—Dengue 412, ague 192, contusions 71, bronchitis 49, venereal affections 47, conjunctivitis 27, colic 20, dysentery 15, and diarrhoea 13.

Dengue fever appeared on the 9th of September; 71 patients being admitted during that month under this head, 276 in October, 63 in November, and 2 in December.

The disease had been prevailing in the city of Kurrachee for nearly two months, before the first case presented itself in the hospital. Communication between the regiment and the people of the city was prevented as much as possible, but it does not appear that quarantine was of any avail in keeping the dengue away. From sixty-eight cases selected as being good examples of dengue, it was noted that the following symptoms presented themselves in order of frequency. Increased pulse, respiration and temperature, lasting for from four to five days, were present in 68 cases; severe pain in the forehead, lasting 2 days in 66; pain in the joints in 61; burning sensation in the skin in 63; congestion of the eyes in 40; pink colored eruption, usually appearing on the third day of the fever, in 40; itching and tingling of the palmar and plantar surfaces of the hands and feet in 21; sorethroat in 15; enlarged lymphatics in 11; swelling of the joints in 3; swelling of the face in 2; relapses after ten or eleven days in 3; average duration of disease 6 days. A scale showing the correlation of temperature, pulse, and respiration, was kept in almost every case, and a specimen one will delineate clearly the ordinary course of the fever:—

In several of the most severe cases the urine was tested for albumen on each successive day of the fever with negative results.

The treatment consisted for the most part in the administration of antacid aperients, purgatives, when indicated, and fomentation to painful joints. Hydrate of chloral was tried in some cases, and a few patients under its influence slept through the fever, experiencing little or no inconvenience from it.

In about thirty cases rheumatic pain in the joints lasted for four or five weeks, but these were at length dispelled principally by friction of the affected parts.

A scorbutic condition of the gums, and foetor of the breath, was now and again met with, but disappeared with the convalescence of the patients so affected.

Ague still constitutes a large number of admissions. The hypodermic injection of quinine is found to be the most useful remedy. The expense of treatment, too, by this method is small; as, generally, only half, or, at most, one grain of quinine is sufficient to effect a cure.

Contusions comprise shoebites. There were 71 admissions under this head. A large number of the latter are due to faultiness in the construction of boots. Were sandals worn instead this large item would almost disappear.

Venereal affections caused 47 admissions against 74, and 60 in the two preceding years. This diminution may fairly be attributed to the existence of a lock hospital in the station.

Bronchitis is met with in the winter months. The men attacked come into hospital almost immediately, and with care, recovery is the rule. None of the other diseases call for special remarks.

There were 12 deaths during the year: 2 from pleuritis, 2 from anæmia, 2 from bronchitis, 1 from ague, 1 from remittent fever, 1 from pneumonia, 1 from dysentery, 1 from diarrhœa, and 1 from hepatitis.

Forty-three children were successfully vaccinated. There was no cholera or small-pox.

The new system of Trench-latrines was tried as an experiment in May last, but was found impracticable on account of the hardness of the soil in the neighbourhood of the Belooch lines, the unfitness of the soil as a deodorizer, and the fact of the drainage from the ground, proposed to be used for the purpose, being seen to be certain to contaminate some of the cantonment wells and city tanks.

The sanitary condition of the lines, barracks, and hospital, is good.

The rainfall was 8 inches and 20 cents.

H. M.'s 29TH REGIMENT N.I.

Haidarabad.—In Medical Charge of Assistant Surgeon B. Keelan; Strength 652.

The average strength of the regiment during the past year has been 652, number of admissions 1,133, number of patients remaining in hospital on the 1st of January 1873, 39, daily average number of sick 33·3, percentage treated to strength 17·9, and deaths to strength 1·22. The monthly admissions into hospital were as follows:—

January	...	...	...	67
February	...	...	...	27
March	...	...	...	25
April	...	...	...	34
May	...	...	...	31
June	...	...	...	44
July	...	...	...	59
August	...	...	...	59
September	...	...	...	86
October	...	...	...	316
November	...	...	...	232
December	...	...	...	153
Total for the year...	...	...	...	1,133

From this table it will be seen that the admissions were considerably in excess of those for last year, being 1,133 against 613 of last year. This is owing to the great prevalence of fever and to the outbreak of dengue during the autumn. Ague as usual stands highest amongst the number of cases admitted, next to which comes dengue, an account of which will be given later on in this report. Contusions of the upper and lower extremity stand at 63; those of the lower extremities were mostly shoebites, many of which resulted in weak ulcers; several were also caused by slight accidents occurring during parade or at the gymnasium; ulcers, too, were frequent, several of these were of syphilitic origin, requiring constitutional treatment. Conjunctivitis was common; these cases were kept apart from the others, as far as space and accommodation would allow; the only cause that I can assign for this disease is the glare combined with the dust; the other diseases were not of sufficient interest to call for remark.

Deaths.—Eight deaths took place in the regiment; an account of each of these was given in the monthly returns. One of the casualties occurred out of hospital suddenly; the deceased had been invalided for enlarged liver, after which he returned to the lines to live with his

people; he became suddenly faint one day, and sank rapidly from exhaustion; this man had suffered from extreme debility for months previous to his death; a *post-mortem* examination would have been of much interest in his case, but this was out of the question, as the man's friends would have objected to it.

Invaliding.—Eleven men were pensioned off, and five were discharged the service: four obtained sick leave to their native country.

Operations.—Two operations performed: one was the removal of a fibro-adipose tumour of long standing, which grew from the sheath of the masseter muscle; after the operation, there was little or no disfigurement, and the tumour did not reappear. The other was a case of fistula in ano; this latter patient was sent to me to be invalided, as he was incapable of performing his duty, but a fortnight or so after the operation, he was discharged quite well, and a different man as far as appearance went. There were also other minor operations performed.

Fevers.—There were 605 admissions from fever during the year under review, the large majority of which occurred after the fall of the Indus, when the water was still lying stagnant upon the ground. As there is no unmingled good, so even the great undertaking of the irrigation of Sind has its drawbacks, for the inundations of the Indus, while they scatter fertility over the country, sow at the same time, with a liberal hand, the seeds of disease which yearly carries off a great number of the inhabitants of Sind; the swamps and marshes giving rise to remittents and intermittents. This year proved an unusually unhealthy one for the regiment during the autumn months; but up to September, notwithstanding the intense heat of the summer months, the corps was very free from sickness; indeed, at first the change from Kurachee to this station appeared to be of benefit to the sepoys, as shown by the monthly returns. The sickness I believe to have been somewhat increased this year by a crop of jowaree having been sown near the cantonment, the watering of which must, more or less, increase the malaria—an effect which should be avoided, in this station especially, where the fever prevails to such a great extent. An inevitable evil, unfortunately, is the existence, close to the station, of several canals and tanks, the emanations from which are most deleterious to the health of the troops; the municipality, at a heavy outlay, succeeded in partially filling up one of these tanks—that which was reported to have been the most offensive—and, I think, with very favourable results, as far as the remedy went; it is needless to say how profitably laid out money would be, for this purpose, as the tanks are a great source of sickness to the station.

Of the number of cases admitted, very many of the patients were weak and debilitated, requiring the administration of arrack and mutton broth to sustain them through the fever; many also suffered from congestion of the liver, a fact which I have constantly noticed amongst the Europeans, owing, no doubt, to the sudden variations of the temperature, which are very marked, taking the people by surprise as it were. When this congestion exists, diarrhoea almost invariably accompanies the fever, and the discharges are then commonly mixed with blood, from obstruction to the portal circulation. This, if not promptly checked, terminates usually in dysentery, which is very likely to become chronic; upon enquiry I find that this is also the experience of the other medical officers here. Amongst the sepoys many suffered from the remittent type of fever. In many cases of intermittents, the intervals between the paroxysms were not true to themselves; the malaria, which become so prevalent here, often established itself in the most capricious and anomalous manner, making one almost hesitate in the belief that it is necessary at all times to classify ague by the terms quotidian, tertian, and quartan.

Sickness became so universal in the regiment, that I thought it highly advisable to recommend a diminution in the number of parades, which was promptly carried out by the commanding officer, as was also the postponement of the drill season, as the health of the regiment was inadequate to the amount of work which this would involve, suffering as they were at the time from the effects of fever and dengue.

Capillary Bronchitis often made its appearance, as a complication of fever, endangering the lives of the patients, or, if not, greatly retarding their recovery.

Fever.—The cases of fever were, as a rule, of a mild type, usually of not more than three to five days' duration, but relapses were very frequent; disordered and enlarged spleen and liver were occasionally observed amongst the cases.

The ordinary treatment for fever was adopted, in addition to which the hypodermic syringe method of injecting quinine was freely used, and with very good results: for enlarged spleen, quinine and iron, or bromide of potassium were given; the ointment of the biniodide of mercury was found to be very efficacious as an external application.

Dengue.—This disease made its appearance at Haidarabad in August last, when cases were spoken of as having occurred in the native bazar and in the city; it confined itself for some time to these localities, spreading gradually until it reached the regiment, and in September 11 cases were admitted into hospital. When this outbreak occurred, tents were pitched for the accommodation of the patients, at some distance from the hospital and lines, so as to cut off any communication with the other sepoys, in the lines and in the hospital, and strict orders were enforced with regard to this. These precautions seemed at first to check the

progress of the fever, considering the quick and steady manner in which it was spreading amongst the other classes of the native community, where these rules were not observed; but I soon found, to my great disappointment, that the admissions from dengue began to increase with astonishing rapidity, until a large number of men in the regiment had fallen victims to it. I believe that the disease must have been imported from Kurrachee, most probably propagated by means of the natives passing to and fro' between these two stations; this is, however, of little import, as of course such intercourse is unavoidable, and there are other sources of contagion with regard to dengue than those of mere personal infection, the fountain-head of which might be profitably sought after, so as to enable us to grapple with the disease, should it again present itself. Is there any reason, for instance, to suppose that dengue may not help to spread itself through the medium of water, as we know that cholera does? If so, isolation of the patients alone can be of little avail so long as the water is open to pollution. With regard to this, it is worthy of remark, that while dengue prevailed as it did in this regiment, the detachment 66th Regiment, consisting of 3 companies, and a battery of royal artillery, stationed here, were almost free from it, when it was raging everywhere else; this will be seen by the following statement:—

Number of cases of dengue, which appeared during the outbreak, in the 66th Regiment and in the Battery 18th Regiment Artillery, up to the 14th of December 1872.

<i>Detachment 66th Regiment.</i>							Number of admissions.	
September...	...	...	...	...	...	...	...	0
October ...	...	...	...	...	...	...	...	0
November ...	...	...	...	...	...	...	...	6
December ...	...	...	...	...	...	...	...	1
							Total.....	7
<i>Royal Artillery.</i>								
September...	...	...	...	...	...	...	...	0
October ...	...	...	...	...	...	...	...	0
November ...	...	...	...	...	...	...	...	3
December ...	...	...	...	...	...	...	...	0
							Total.....	3

Thus it will be seen that only 10 cases have occurred amongst the European troops stationed here, and these after the severity of the outbreak had expended itself. A table is appended showing the admissions into the Belooch hospital.

This immunity from the disease in the European hospitals is owing, no doubt, principally to their purer supply of water, and also to their better food and superior accommodation, in addition to the strict isolation to which the soldiers were subjected.

According to my experience, the premonitory signs of an attack of dengue are those of ague, excepting that, as a rule, the patient experiences rheumatic pains in one or more parts of the body, sometime before the fever makes its appearance; however, I have noticed in many instances that the disease comes on suddenly (as it did in my own case, the first warning I got being a seizure of rheumatism in the back, while out walking); the other symptoms quickly follow, with pains more or less severe in the wrist, ankles, knees, &c., generally, but the most severe pains were felt in the forehead and loins: the patient then begins to feel chilly, particularly in the back, along the course of the spine; the face becomes pale, presently the slight sensation of cold and shivering begins to alternate with flushes of heat, followed by severe headache and suffusion of the eyes; pulse—full, strong, and rapid; urine—scanty and high-colored; the patient is uncomfortable and restless; in short at this point of the disease it very nearly resembles a mild attack of ague in the hot stage. In nearly all cases, a mild perspiration was easily produced, and sometimes profuse perspiration ensued. Sleeplessness is, I may say, invariably present, the patient sometimes complaining more of this than of anything else. The fever is of short duration, generally disappearing in the course of from one to three days, sometimes four, leaving the patient weak and prostrated, suffering very frequently from loss of taste, with dyspepsia, and occasionally also from numbness of one or more limbs.

The eruption, which is not always present, makes its appearance about thirty to seventy hours after the beginning of the fever. I have noticed that it breaks out just as the fever is leaving: in the natives it is sometimes difficult to distinguish, on account of the color of the skin, but in the European it is well marked generally, and resembles the rash of the measles; some say that it usually commences upon the extremities; as far as my experience goes, however, I have more frequently seen it begin upon the chest and lower part of the neck; it appears, and disappears and reappears, and may continue in doing so, frequently repeating itself in this manner for some days. This recurrence, too, is often to be noticed with regard to the fever;

as a rule though fever only makes its appearance once. Prostration of strength is not the only thing that the patient suffers from at this stage of the disease: the pains in the joints now become more severe than hitherto, occasionally, though being all but absent at this time. Usually there is much stiffness accompanying the rheumatism, which is especially felt in the early morning upon awaking, the pains being so capricious that they then attack parts without any apparent cause, and gradually disappear as the day wears on; and this may go on for weeks or sometimes months: there were patients of mine who, having been attacked with dengue almost three months ago, still complained of pains in their joints at times. This protracted effect of dengue is no doubt due, in a great measure, to the severity of the weather, which is very cold here at this season of the year.

In connection with dengue, it is remarkable that it seldom occurs amongst Europeans without bringing in its train some other affection, which often proves more severe than dengue itself: such for example as sorethroat, ague, dysentery, debility, dyspepsia, &c., and of course these are attended by the rheumatic pains so peculiar to the disease. Dengue, no doubt, induces a peculiar state of the system which lays it open to these complications, an effect intensified by the cold weather and the malarious season.

Regarding the treatment of dengue I find that, unless proper precautions be taken to prevent the patient from catching cold during the fever, especially if the eruption happen to be on at the time, agonizing pains, which before appeared to be comparatively mild, seize the patient. These often prove to be obstinate. Some of the patients are difficult to manage; in the irritability of the fever they throw off their bed cloths, and lay themselves open to the unfavourable result just mentioned. In the first blush of the disease, if the stomach happened to be foul, and this was very often the case, an emetic was given, followed by purgatives and diaphoretics, the latter always afforded much relief to the patients, especially in cases where fever was high. Quinine with iodide of potassium was also given with advantage; after the fever had passed away, tonics and iron proved useful, and when the pains become chronic, exercise and electricity seemed to do more good than almost anything else; friction, with anodyne liniments, was always carried out, but it only gave temporary relief.

The prognosis of dengue is extremely favourable: no deaths have taken place in the Belooch regiment, neither have any occurred, to my knowledge, in Haidarabad. The subsequent effects ordinarily produced by an attack of dengue have just been mentioned as far as my experience goes.

Before closing these remarks upon dengue, I should like to add the following table showing the number of cases which were admitted into hospital from the Belooch regiment, while the disease prevailed:—

	Natives.						European officers treated.	
September...	...	11	...	...	...	...	0
October	138	...	...	...	...	0	
November	25	...	...	...	...	3	
December	1	...	...	...	...	0	
		<hr/>						<hr/>
Total of natives.		175	Total of European commissioned officers treated.					3

The Water Supply.—Last year, owing to my having so recently arrived in the station, I was unable to give a detailed account of the water-supply here, which is, I fear, inferior both with regard to quantity and quality.

The water-supply of Haidarabad is a question which ought to be of serious interest both to the troops and to the other inhabitants of the cantonment and city. It has often been discussed, and different plans have been proposed for obtaining a pure and wholesome supply from the river Indus, or the Foolali, which is a branch of it: the former flows so close to the city, that it seems marvellous how the matter should have remained dormant so long in so populous and important a place as Haidarabad. I hear that now a scheme is being thought of by the municipality, which will probably be aided by Government to some extent, for conveying water from the river; and if this be carried out, it will prove a great source of health and comfort, not only to the troops, but also to the whole of the inhabitants of the station; and the outlay which this would necessitate, must be attended by far more than a proportionate value, to the people and the municipality, in a sanitary point of view.

The source from which the water-supply is derived, for the use of the 2nd Belooch regiment is from three wells: these must necessarily contain impurities, situated as they are near the bank of a nullah which, after the fall of the Indus, contains stagnant water for months, being more or less fed by soakage from this adjoining stagnant source. Thus it will be understood that, unfortunately, this water, though impure, becomes, to some extent at least, a necessity, serving as it does to replenish the wells, the supply of which, even with the aid of the

nullah, is inadequate to the quantity required, as was experienced last year, just before the annual rise of the Indus. The water at this time was so low and muddy that it was quite undrinkable without the aid of filters; in fact, had the overflow of the river been later than it was, we should have had no water; as it was there was a scarcity.

Happily, the main source of the water-supply in these three wells is not confined to the nullah, the adjoining ground and plains contribute the largest share; being covered for a considerable time by the inundation, they store up the water, which continually percolates through the soil and gravel into the wells. This was demonstrated practically on one occasion when the wells were being cleaned out; a stone near the bottom of one of these fell out, and the water dashed in from the direction opposite to the nullah before alluded to, causing the speedy exit of the persons inside.

A point with reference to these wells that I should wish to bring forward, is their liability to pollution by the natives, as they are unprovided with any appliances for raising water—the bheesties and other natives who frequent these wells have no other resource than to lower their own vessels, which, I am afraid, are often not too clean, by ropes, thus, probably, imparting to the water contamination which it could not receive were a proper apparatus afforded for raising the water. I conceive it to be quite probable that vessels taken from a house infected by dengue, and lowered into these wells, may cause that disease to spread by means of the water taken from them, in the same way that many epidemics of cholera have been discovered to propagate themselves along the lines of human intercourse.

The mere pecuniary cost of erecting three pumps, one in each of the wells, would probably be sufficient to protect the water, and thus to cut off most likely one of the causes of the spread of disease. I merely suggest this remedy, in the event of there being any official obstacle to the furtherance of the new scheme for the water-supply; for, of course, I need not say how far preferable it would be to have the water conveyed through pipes direct from the Indus or Foolali, nor add how essential it is that the station should receive an original supply of pure and wholesome water; but I would urge the necessity, with all deference, of having it conveyed through closed channels to the people who are destined to consume it, so as to avoid any contamination. This would not only be the means of preventing much sickness, but would also help to enable the medical officers to ascertain to what extent the spread of infectious diseases in this station may be attributable to this cause.

Should the proposed new scheme be carried out, I believe that the importance of the water being taken direct from the pipes for drinking purposes, cannot be overrated; as, by doing so, the water could not, by any possibility, become polluted by native dipping-vessels, or other sources of impurity, to which wells in this country are so liable.

Should this new scheme be effected, I consider it very probable that, in the event of an outbreak of cholera occurring in the station, it would, at any rate, prove an effectual means of checking its progress to some extent at least, if not of altogether arresting its further development amongst the troops and inhabitants.

Another important point which the consideration of the water question involves, is the manner in which malaria and other poisons become introduced into the system. No doubt, the question of having the water carried through pipes in the manner just mentioned, would be of great interest in connection with the prevalence of fever which, I am convinced, too often results in Haidarabad from drinking bad water.

In face of so many pre-existing causes of sickness in Haidarabad, the water question, it appears to me, should be all the more urgently considered, as it must necessarily involve so many serious consequences.

The water in these wells was analysed in 1869, and was found to contain a large amount of organic matter.

The Royal Artillery and 66th Regiment are supplied with drinking water from Jacob's tank; in this instance there is an appliance for raising the water, a Persian wheel being used for this purpose in addition to which the water is filtered. It would be my great wish to have the 2nd Belooch Regiment provided with filters; this, I have no doubt, would greatly tend to decrease the number of admissions into hospital. Simple filters, consisting of chatties containing charcoal, would not be productive of much expense, but certainly of much good.

Conservancy.—The Dry-earth system is the method of conservancy in use in the regiment; this is carried out by eight sweepers, and nightsoil is removed in carts every evening and morning between the hours of sunset and sunrise; during the day the carts are not allowed to go about. The sewage matter is removed to a nullah about two and a half or three miles distant from the Belooch hospital. It was in contemplation, some six months ago, to introduce the Trench system of conservancy, instead of the mode now in use in the regiment, and official enquiries were set on foot respecting the advisability and method of carrying this out, when it was found that every thing was against the practicability of the proposed project, while

there was nothing in its favour: The following were my views upon the matter, as expressed in a letter at the time:—

(2). There is no suitable place within any reasonable distance of the lines where the Trench system of conservancy can be satisfactorily carried out, as it is in other stations, without its being highly injurious to the health both of the troops and of the other inhabitants of the cantonment. The only spot available and suitable for this method of conservancy, is situated about 1,200 yards, or nearly three quarters of a mile, from the native infantry lines. Should this system be carried out, and the men, women, and children of the regiment be made to walk this distance for the purposes of nature, it would fall very heavily upon them. In a sanitary point of view, the constant exposure to the sun, which the coming and going would necessitate, being a fertile source for engendering fever and other diseases, would materially lessen the efficiency of the regiment.

(3). Owing to the situation of the station of Haidarabad, placed as it is on an elevated plateau of limestone rock, the deodorizing power of the ground must necessarily be very limited, in consequence of the total absence of alluvial soil. The ground is formed of the *débris* of the rock before alluded to, consisting of fragments of stone broken off and interspread with sand; and the long distance as mentioned in paragraph 2 of this letter, would be a great obstacle. If this should be enforced, it is with the greatest difficulty that the women and, especially, the children, could be compelled to go so far daily and nightly; deception would then in all probability be practised, the consequences of which can be easily imagined.

(4). It was also in contemplation to dig trenches on the "maidan" which forms part of the parade ground, but this again would be open to objection on account of its close proximity to the officer's quarters and to the European barracks.

(5). In conclusion, I consider the present mode now carried out in the regiment, viz., the Dry-earth system of conservancy, to be especially suited to this locality for two reasons: first, that the average rainfall here is very slight; secondly, that about three fourths of the sepoys of this regiment use no water for the purposes of ablution; consequently, little, or no difficulty, arises in the use of the Dry-earth system, as would be the case in other parts of India, where the monsoon is considerable, and where the daily use of water is universal amongst the sepoys."

There are four new latrines built of brick, two for the accommodation of the women and children, and two for the use of the sepoys, besides which there is one at the disposal of the hospital, the latter being built of mud. An excellent plan is adopted in this latrine, which is a great improvement upon the others: a "coondie" is appropriately placed for the reception of the urine, the reason of this being to separate the solids from the fluids, and so to avoid the rapid decomposition which otherwise must ensue, although the system cannot be so effectual in the regimental latrines, on account of the absence of the coondie; still every care is taken in order to promote all possible cleanliness.

Hospital and Lines.—An account of the hospital and lines was given in last yearly report. They are both well kept, and cleanliness is constantly attended to; the former has no *post mortem* room; the want of which would be very much felt in the event of any sudden deaths occurring, which would necessitate *post mortem* examinations, as the operation could then only be performed in the verandah. It is also rather to be regretted that the hospital is so near the lines: however, every precaution is taken to prevent the patients going to the lines or mixing with the other sepoys. With regard to the lines, I consider that the cubic space allowed for each sepoy is insufficient, as, supposing the women and children be taken into consideration, as well as the sepoys, each individual would have somewhat less than four hundred cubic feet, whereas, taking Belgaum for example—there each sepoy is allowed 1,688 cubic feet, of course exclusive of women and children. To sum up, a sepoy in Haidarabad is allowed 704 cubic feet, exclusive of women and children, besides the use of an enclosed verandah; while in Belgaum, which is a much less malarious station, a sepoy has more than double the amount allowed him. There can be no doubt whatever, that, if three or more pendals were added to the lines in Haidarabad, the health of the regiment would be improved by this addition. There is one good feature in the lines, and that is their excellent ventilation; nothing could be better than the method used, which was described in last yearly report.

Vaccination.—Vaccination has been carefully practised; all those who were reported to be unprotected were vaccinated, viz., 55. With regard to making experiments upon people who have already been vaccinated, and also who have had small-pox so far great difficulty arises from the unwillingness of the women to undergo re-vaccination, or to allow their children to be operated upon, and the commanding officer has as yet been unable to spare any men for this purpose, so that I shall be obliged, having no option, to fall back upon the recruits and others who will, I hope shortly come to live in the lines. Unfortunately, few have come as yet, and this will account for the small number of cases recorded in the returns. At present, I am endeavouring to induce some of the married women, with their children, who

have already had small-pox, to come forward for the purpose of being again vaccinated, but they seem to have an almost insurmountable objection to this; however, I will do what lies in my power to further the experiments which are tried now in so many parts of the presidency. Although my experience is very slight upon the subject of these experiments, I think it will be very difficult, in many cases, to come to a correct conclusion as to the success or otherwise of the operation in adults, particularly in the case of men, on account of the thickness of the skin, as the vesicles are never so well developed in adults as they are in children.

Diet of Sepoys.—The ordinary daily diet of a Mussulman sepoy is the following:—

								lbs.	oz.
Rice or wheaten flour...	...	...	...	...	...	...	...	1½	0
Mutton...	...	...	...	...	...	...	...	1	0
Ghee ...	...	...	...	...	...	...	...	0	4
Vegetables ...	...	...	...	...	...	...	...	1	0
Salt ...	...	...	...	...	...	...	...	0	2½
Curry Stuff ...	...	...	...	...	...	—	...	0	2
Occasionally fish	...	...	...	...	...	...	...
Do. fowl	...	...	...	...	...	...	...

Daily amount of food consumed by a Hindoo sepoy:—

								lbs.	oz.
Rice or wheaten flour	...	...	...	...	...	...	...	1½	0
Dhall ...	...	...	...	...	...	...	...	0	8
Ghee ...	...	...	...	...	...	...	...	0	4
Vegetables ...	...	...	...	...	...	...	...	1	0
Salt ..	...	...	...	...	...	...	...	0	¾
Curry Stuff ...	...	...	...	...	...	...	...	0	2
Mutton	...	...	...	...	...	...	...	1	0
Occasionally fish	...	...	...	...	...	...	...
Do. fowl	...	...	...	...	...	...	...

The Hindoo sepoys form about one sixth of the regiment; there are very few Brahmins, and these, of course, abstain from fish and flesh: the remaining portion of the regiment is made up of Mussulmans. There can be no doubt that the sepoy here is very well off as regards food.

The bazars are well furnished, there being an abundant supply of provisions; several kinds of vegetables are to be had and at a very cheap rate at this time of the year; (in the hot weather they are scarce and consequently much dearer), such for instance as the rotaloo, bhenda, moola, bygum, carrot, &c.; these are brought in from several gardens on the banks of the Foolali, and may be bought in the market for the low rate of four pounds (4lbs.) for one anna: potatoes are not grown here to any extent, but are brought from Mulleer, a distance of nearly eighty miles, so that they are expensive and beyond the reach of the sepoys.

TOPOGRAPHY: Lat. 25.°21'N.; Long. 68.°12'E.

Upon first entering the station of Haidarabad, especially after the barrenness of Kurrachee, one is struck by the contrast it presents to the surrounding country which, generally speaking, is sandy and desolate looking, dotted with cactus bushes, &c., in clusters here and there. Whereas, upon coming into Haidarabad, the first appearance gives an impression of fertility and freshness. A broad avenue of fine, large trees, in parts interlacing each other overhead, runs from Giddoo Bunder to the town (a distance of about 3 miles), while on either side can be seen green crops of jowaree and bajree, in their season; this is the favourite ride or drive, but there are one or two others equally pretty: these drives and walks, with the exception of one which runs parallel to the river Indus, intersect a large plantation of trees, principally babal, which, with others, forms a pleasing variety. These trees are said to have been planted shortly after the Battle of Meanee, nearly thirty years ago. As the station of Haidarabad is on a plain, superior to the highest of these trees, they cannot impede the refreshing sea-breeze, for which this locality is proverbial in the summer-time, making the nights cool and pleasant; but I believe, with another medical officer, that the trees, placed as they are to the south-west of the cantonment, are of great service in absorbing the malaria from the air in its passage through, thus acting as so many purifiers: the ground which they cover containing many nullahs, the water of which is stagnant during several months of the year. During the inundation, a great part of the ground which this plantation covers is under water; soon after the river subsides the whole place is overspread with grass, particularly the beds of the nullahs, &c., upon which some of the cattle of the neighbourhood feed.

There are also two Government gardens, which form a pleasant resort in the evenings.

The station itself is situated on an eminence some twenty feet above the level of the surrounding country: the camp consists of two rows of mud-built bungalows, one-storied and flat-roofed, roughly built, but, with their grey color, harmonizing not badly with the green surroundings of the station. The points of interest in Haidarabad are the tombs and the Fort; the tombs are those of the Ameers of Sind for many generations back; some of these are kept in very good order and are well worth seeing; several portions of the interior being, in some instances, of carved marble, and the tomb of the chief rajah contains relics of its last occupant.

The Fort, which stands just as it did when the English marched in to take possession after the Battle of Meanee, is, in shape, somewhat irregularly oblong, and has a tower some fifty feet high, the prospect from which is very varied, giving a bird's-eye view of the whole surrounding country; this tower and some of the bastions of the Fort are mounted with cannon.

The Fort is, so to speak, in the very midst of the canals and nullahs, and is, consequently, much more unhealthy for its inhabitants as an abode than camp, on account of the exhalations arising from these impure sources; the Europeans living there suffer continually from fever, but this of course is unavoidable as long as the sanitary condition of its neighbourhood remains as it now does. The Fort covers an area of thirty-seven acres; it contains the chief arsenal in Sind, and also several small bungalows for the use of the employés in the Ordnance Department, in addition to the store lascars' lines, which are now in process of being built. The native town consists of an oblong mass of mud-built houses, interspersed with occasional daubs of whitewash; its population is of 32,162; it appears to be cleanly and well looked after for a native town: with respect to the camp it is situated to the north-east and is built on a plain still higher than the camp, which, consequently, receives the overflow from the city during the rainy season, bringing with it, most probably, quantities of decayed animal and vegetable matter, some of which pass into the nullahs which are close to the wells, from which the drinking water is taken for the use of the Belooch regiment and of the European officers of the station.

Drainage.—There is no drainage to speak of in the cantonment, the only artificial drain being, as far as I can see, a narrow cutting opposite the Belooch Mess, which leads down to a large nullah; otherwise the drainage is natural, the roads, during the monsoon, inclining towards the low ground, act the part of drains, and help, more than anything else, to draw off the water. During the heavy rains, such for instance as those of last July, the compounds resemble so many pools; in fact, the whole of camp, one might say, is almost one sheet of water, and the roads appear like rivers, the water being in some parts say from 6 to 9 inches deep.

Last year the rainfall was an exceptionally heavy one for Haidarabad, being eight inches and sixty-three cents, as will be seen by the accompanying table; however, the lines and houses in camp suffered less than may have been expected, taking into consideration the nature of the buildings. The sepoys were not so much inconvenienced as may have been supposed, as their quarters, at a first glance, would seem particularly liable to damage from the rain, on account of their deficiency in plinth, the floors being on a level with the ground: they are protected, however, by an elevated surrounding of chunam, of about a foot or so high, which at the same time forms of itself a foot-path nearly two yards in width.

Table showing the Rainfall for the year 1872:—

1872.	Inches.	Cents.
January ... ..	...	...
February ... ..	...	...
March ... ..	...	...
April ... ..	...	...
May ... ..	...	...
June ... ..	...	...
July	6	18
August	1	33
September	1	12
October ... ..	...	...
November ... ..	...	...
December ... ..	...	...
Total... ..	8	63

The unusual amount of sickness in Haidarabad this year, is most probably attributable in part to this excess of rainfall (which was much above the average), causing a larger surface of marshy ground for the sun to act upon, and, consequently, a greater amount of malarious exhalations than would be engendered by the inundation alone.

Temperature.—A tabular form is appended showing the maximum, minimum, and mean temperature during the different months of the year :—

Months.			Minimum.	Maximum.	Mean.
January	...	...	56	64	60
February	...	...	55	61	58
March	...	...	70	78	74
April	...	...	78	83	81
May	...	...	82	93	87
June	...	...	83	102	92
July	...	...	84	88	86
August...	...	...	80	89	84
September	...	...	82	93	87
October	...	...	73	75	71
November	...	...	61	74	72
December	...	...	61	71	66

The sea-breeze which prevails here during the summer months, tempers the heat, which otherwise would be almost unbearable for about four or five months in the year; occasionally the breeze ceases for a short time (three or four days usually), sometimes giving place to the land-wind which brings with it clouds of dust; this wind is hot and very trying, giving rise frequently to headaches, feverish symptoms, &c.

Gymnastics.—These are very much encouraged by the Officer Commanding the regiment, and tend to develop the *physique* of the sepoys, as well as to improve the efficiency of the regiment; this useful and harmless recreation the men look upon as one of their chief sources of amusement. Sports of various kinds are resorted to, and often nearly the whole regiment may be seen at the gymnasium, either looking on or engaged in the exercise: wrestling is a common amusement with them, and there are many skilled athletes amongst them, several of whom are able to perform remarkably well upon the trapeze, parallel and horizontal bars, &c.

H. M.'s 30TH REGIMENT N.I., JACOB'S RIFLES.

JACOBABAD.—In Medical Charge of Assistant Surgeon J. HOWELL; Strength 510.

The number of admissions into hospital for the year ending 1872 have been 931 and the mortality 19. Comparing this with the preceeding year's return it shows a slight diminution in the number of admissions, the percentage of casualties being the same. The following table will point out the difference :—

						1871.	1872.
Average strength	...	...	...	...	...	563	510
Admissions	...	...	...	...	...	1,042	931
Deaths...	...	...	...	...	...	20	19
Proportion of admissions to strength per cent.	...	...	...	...	...	185.1	182.5
Proportion of deaths to strength per cent.	...	...	...	...	...	3.7	3.7

Marching.—The head-quarters of the regiment were in camp during the year. Two detachments comprising 147 rank and file proceeded to Khelat, the first of 61 men accompanied the Political Agent of Khelat in the month of April in medical charge of Assistant Surgeon Bowman. The remaining number were sent in the month of June under the command of a European officer and in medical charge of first class Hospital Assistant Fuckera Sing. The latter having had to march in the hottest time of the year suffered very much from the effects of the sun. From reports received 26 of the men were attacked on the 3rd days' march (32 miles through the desert) with symptoms of heat-apoplexy; 3 of the number succumbed on the day of the attack, another man died a few days after from congestion of the lungs, while at Khelat 2 of the same detachment died from dysentery, and one from pneumonia. On perusing the remarks of Dr. Bowman it seems that all those who marched to Kelat in June suffered from the effects of the dreadful journey. On the return of the party on the 31st October, the men of the 1st detachment were in excellent health, but the 2nd party looked as if they had undergone great hardship. Several of them yet suffer from constant headache and a few of the sequels of sunstroke: one of the number died a month ago suddenly from congestive apoplexy of the brain.

Health of Regiment—Continues very unsatisfactory: no improvement can be expected as long as attention to sanitary matters are neglected. Malaria is generated to a great extent, and the flooding of the country, which has occurred for the last two years, tends materially to increase the unhealthiness of the station. The floods this year, which came on the 22nd of July, almost swamped the whole of Jacobabad. The Rifle lines were surrounded by water, the married quarters being quite swamped. All this expanse of water drying up gradually, assisted with decaying vegetable matter, which is very profuse, must as a matter of necessity act very detrimentally.

Prevailing Diseases—*fever, skin-diseases, rheumatic and chest affections.*—Fever: 504 admissions from this cause, being more than half the total number, all malarious and chiefly of the intermittent form: there were 12 cases of remittent fever, these latter were very severe and caused 3 casualties: there was nothing special in the treatment. The numbers of admissions do not show the amount of men attacked. Several daily take quinine as a prophylactic, and many who suffer slightly from the complaint have medicines administered them and attend their duties. The largest number admitted from this cause were in the months of October and November.

Skin-Diseases comprising chiefly Ulcers and Boils.—There were 100 admissions from this cause, the former being particularly obstinate in their nature and in many cases only improving on change of climate.

Chest Affection.—These cause a very large mortality, they chiefly occur in the cold season. Out of 44 admissions there were 10 deaths, 3 being due to phthisis, and the others to pneumonia. The deaths chiefly occurred in men of broken-down constitutions, with enormous spleens. Stimulants internally, with quinine if the influence of malaria was suspected, and warmth externally, seemed to do the most good.

Rheumatic Affection.—Twenty-seven cases most of them being chronic and suspected to be due to syphilis.

Digestive System.—Under the heading of affections of the digestive system there were 3 deaths; one from hæmatemesis, due to cirrhosis of liver, the man died suddenly, vomiting about 3 pints of blood, and 2 deaths from chronic dysentery.

Hospital Accommodation.—The hospital, though of decent size, is not large enough for the number of men admitted in the cold weather; several of them remain in rowties pitched in the hospital compound; a fireplace is a great *desideratum* and this I am in hopes will soon be supplied.

Vaccination.—This is regularly practised: there were 13 cases successfully vaccinated since last inspection.

Latrines (on Dry-earth system) both regimental and hospital are well looked after.

Invalids.—Nine men only invalided during the year, this is comparatively a small number, but as several of the men were of 14 years' service who were fit to appear before the board, they were allowed to serve another year, so that they may be able to get pensions.

Recruits.—Fifty-two admitted during the year.

Rainfall.—Nine inches, a very unusual occurrence, there were only 75 cents. for the preceding year.

Thermometer.—In the shade average, maximum 112°, minimum 36°.

H. M.'s 1ST SIND HORSE.

JACOBABAD.—In Medical Charge of Assistant Surgeon S. O. B. Banks; Strength 354.

The returns for the past year show a slight increase in the number of admissions over that of the previous year.

Deaths for the year ending 31st December were 13, an excess of four over that of the previous; all the deaths took place in hospital from the following diseases:—

From pneumonia.	...	...	...	...	...	...	9
„ ague	...	...	...	...	...	...	1
„ dysentery	...	...	...	...	...	...	1
„ chronic rheumatism	...	...	...	...	...	...	1
„ rupture of spleen	...	...	...	...	...	...	1
							—
							13
							—

There is nothing particular to note in regard to the fatal cases of pneumonia, death occurring from five days to fifteen hours after the disease revealed itself.

Of the other deaths I need only mention the one occurring from rupture of the spleen. The patient, aged 18—a trumpeter—a delicate looking boy—pale and emaciated—was thrown from his horse on parade; when on the ground his horse rolled over him: after a few minutes he got up and complained of a pain in his stomach, but from the symptoms and appearance I had no doubt the case was one of internal hæmorrhage. He died an hour after the receipt of the injury, and on making a *post mortem* examination I found in the peritoneal cavity about 80 ozs. of venous blood—liver, stomach, kidneys, heart, and lungs were sound. On removing the spleen it was found large, very dark, and easily broken down, the structure being very soft. An extensive triangular rupture was found occupying its whole length, and on weighing it as it was, perfectly bloodless, it was found to be 2 lbs. 12 ozs. and half.

The total number of admissions for the past year were 640: 394 of which were cases of fever intermittent, the above numbers showing the men of the regiment to be in a more unhealthy condition than they have been for years.

The daily average of sick for the years ending 31st December 1871 and 1872:—

1871.				1872.			
Daily average	...	...	14.82	Daily average	...	...	13.53
Total number treated for the year	...	...	597	Total number treated for the year	...	...	662
Total to strength treated	...	...	166.20	Total to strength treated	...	...	187.0
Deaths to strength	...	...	2.50	Deaths to strength	...	...	3.67
Deaths to treated	...	...	1.50	Deaths to treated	...	...	1.96

Fever of an intermittent type was the prevailing disease throughout the year, next in frequency boils and ulcers. No epidemic.

The thermometer showed a maximum of 104° and minimum 38°.

Rainfall during the year was 9 inches and 8 cents, the usual rainfall being about two inches. It fell in January, February, March, April, July, August, and September: after the rain in August and September the hospital became full with fever cases.

Indus water got in here on the 19th of May, and the banks of the canals overflowed on the 20th of July. The floods this year were higher than they have been known before, the camp for a considerable time being in absolute danger of being washed away; and, as it was, a considerable amount of injury was done to the Rifle family lines. The water was kept out of camp with the greatest difficulty.

However doubtless the Jacobabad floods in 1872 have been reported on by higher authority, I may, however, mention that owing to the great quantity of water all round us, which has by no means dried up yet, have caused us to have a longer fever season; and, it appears to me, of a stronger and worse type than usual. As an instance, I may mention that in November 1871, sixty-four cases of intermittent fever were admitted. In the same month this year the admissions from the same disease were 104, and in December 1871 twenty-eight cases of remittent fever were admitted, and in the same month this year 65.

Most likely the floods increasing yearly in this part of the country will doubtless draw the attention of the authorities to the propriety of maintaining troops, year after year, in a station so notoriously unhealthy, without ever giving them a change which would be as beneficial to the State as it would be to the health of the regiment. As I presume it is considered necessary to keep up regiments here, doubtless the health and *physique* of the men are deserving of consideration.

I have taken the liberty of pointing out before how beneficial and absolutely necessary it is that regiments should get a change from Jacobabad that I have not much more to add.

Having more experience of the place I have become further strengthened in my opinion, and, I also may add, that large quantities of jungle springing up all round and increasing floods are making matters worse. The fever is in my opinion of a worse type, and I should think, after some time, we shall likely have jungle fever.

European officers suffered very severely from repeated attacks of fever, many being obliged to go away on leave.

The men are below par in *physique*, and age very fast, which is owing no doubt to the climate.

The lines are in an unsatisfactory condition: new ones are I believe about to be built.

Large quantities of trees have been cut down this year which may possibly make the station a little cooler.

Prevailing winds S.E. and N.E. from May to October: N.W. and E. from November till April.

Considerable shock of an earthquake felt on the night of the 15th December, lasting, according to opinions, from half a minute to a minute and a half or more.

H. M.'s 2ND REGIMENT SIND HORSE.

JACOBABAD.—In Medical Charge of Surgeon R. BYRAMJEE; Strength 453.

On the 1st January 1872 there remained 38 patients in hospital; 581 were admitted during the year and 52 remained over at the end. Ague 337 cases were admitted during the year.

I append a table of admissions during each month of these years 1870, 71, and 72:—

Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1870...	14	10	10	9	14	11	18	27	64	108	42	44
1871...	43	20	14	16	21	4	6	4	24	24	20	15
1872...	14	17	9	8	17	12	16	16	67	69	45	48

From the above table it will be seen that there were many more cases of ague in the months of August, September, October, November, and December this year than last; this was owing to the canals being allowed to dry up and refill, to be dried up a second time; and also to the months of November and December being comparatively warm, not a single frost having occurred in those months this year, whereas in 1871 there was frost on several days in those months. I am still more confirmed, from the experience of the last year, in the usefulness of the sulphites in the treatment of ague.

Dysentery.—During the months of October and November more cases (12) of dysentery were admitted in this year than in any of the preceding years that I personally know of, viz., 69-70-71. I attribute this unusual prevalence of dysentery to the effects of damp arising from very extensive inundations which occurred during the months of July, August, and September of this year.

Admissions from, and treatment of, the remaining diseases shown in the return, was much the same as in previous years. I quote below remarks made in my monthly reports.

January 1872. As usual annually many men died during the cold season—this January has proved unusually fatal to debilitated men. The ague poison has lasted longer, owing to a second filling of the big canals during the month of December and the slow drying of them.

February 72.—Nine cases of pneumonia were under treatment during the month, of which one died, one is still in danger, two are discharged well, and the remaining are doing well.

March 72.—There was comparatively speaking little sickness during the month of March, Out of the seven cases of pneumonia five were discharged cured, and two are convalescent.

April 72.—No case of any consequence admitted in April, with the exception of a severe compound fracture of the bones of the leg just above the malleoli.

August 1872.—The ague cases have not increased in this month. Jacobabad is surrounded by inundation water on all sides—good deal of rain fell during the month.

September 1872.—The ague cases have increased from 16 in August to 72 in September; in the corresponding month in 1871 there were only 24 cases, and in September 1870, 64 were treated. In 1870 the water in the canals had fallen rapidly, giving off malaria fast towards the latter end of September; in September 1871 the canals were full of water with a rapid scour; in 1872 the canals were allowed to dry and were refilled again, and were beginning to dry again in the latter part of the month. The explanation I gave last year in my remarks (monthly return for September) holds good again.

October 1872.—More cases of ague were treated during this month compared to the last. The smaller canals have been slowly drying during the present month: more fever cases might be expected during November. A case of pneumonia was admitted: he is doing well: he was treated with stimulants, expectorants, and blisters; nothing in the form of antiphlogistic remedies were given. An unusual large number (6) of cases of dysentery were treated during the month—chiefly among the Seiks.

November 1872.—On the 3rd November at 6 P.M. this regiment left for Sakkar—a distance by the circuitous road taken on account of the remains of the flood water of 60 miles—and arrived there at 10 A.M. on the morning of the 4th ultimo, or in the space of 16 hours, including two halts of about 20 minutes and one of 40 minutes. The regiment did not seem to suffer by it—either men or horses—it returned to camp on the morning of the 11th November.

Ague has been less this month but pneumonia cases have begun to come in. Of the 4 treated, one is discharged well, two are doing well, and one is still in danger. The weather is becoming colder, there have been northerly winds which will lessen ague cases, arising from direct influence of malaria, which becomes lesser in quantity; but the pneumonia and other inflammatory diseases are likely to increase in number.

December 1872.—Forty-eight cases of ague were admitted during the month of December this year against only 14 cases in the corresponding month of the year 1871. I account for it and the great prevalence of ague in the last month also to the slower evaporation of the canals: this year they were allowed to remain in communication with water in the main canals much later than last year; also it was owing to the lesser amount of cold; last year there were several frosts during the months of November and December. Of the six cases of pneumonia one was discharged to duty, the remaining are doing well.

Vaccination.—Thirty-six only were vaccinated during the year. There is an insurmountable amount of prejudice against vaccination, and it was with the greatest difficulty and trouble that so many even were got. I have to thank my hospital assistant, Abdool Rymon, General No. 312, and also the hospital orderly duffedar, Mahomed Khan, for their trouble in getting the children. I spoke often to several native officers on the subject but without any good.

H. M.'s 3RD SIND HORSE.

JACOBABAD.—In Medical Charge of Assistant Surgeon J. S. CARSWELL, M.B.; Strength 338.

The medical history of H. M.'s 3rd Regiment, Sind Horse, for the year 1872, compared with that of the preceding one, affords little to comment on; as the regiment, being always confined to the same station, is consequently exposed, from year to year, to the same climatic influences; and as the diseases most prevalent are those generally attributed to the baneful influence of climate, they vary but little in their nature, type, or prevalence.

However, the admissions from this cause appear to have been fewer this year than in the preceding one, although the year has been generally regarded by long residents as an unusually unhealthy one, owing partly to the inundations being much higher than usual, and partly to the longer continuance of the hot weather, which was probably due to the lateness of the setting in of the north-east monsoon, which is always looked anxiously for towards the latter end of the year.

From the station being so densely wooded and so intersected by canals (which, after the inundations have subsided, are full of stagnant water, swarming with fish that are left to decompose in the channels as the water evaporates and percolates through the soil; the stench arising from this cause, towards the end of November and in the beginning of December, is something horrid), it becomes enveloped in a damp stagnant atmosphere during the absence of the north-east wind. The effects of this atmosphere on the constitution of the men is most pernicious; almost all the men who have been admitted into the hospital during the six weeks that I have been in medical charge of the regiment, suffered from anæmia and innervation.

The total admissions into hospital during the year amounted to 770.

450	of these were for	ague and remittent fever.
18	" "	debility and enlargement of the spleen.
115	" "	boils and ulcers.
80	" "	contusions.
17	" "	diarrhœa.
9	" "	dysentery.
11	" "	pneumonia.
2	" "	bronchitis.
7	" "	syphilis (primary and secondary).
9	" "	gonorrhœa.
3	" "	renal diseases.
59	" "	skin and other diseases.

The strength of the regiment being 494 natives and 6 Europeans; the proportion of admissions into hospital to strength per cent. was 227.1.

The average daily sick being 27.3.

The proportion of daily sick to strength was 3.3.

The deaths which occurred being 10.

The proportion of deaths to strength was 2.9.

From the above table, it would seem that the labour of about six men has been lost to the regiment during the year; whilst the health of the whole regiment has suffered very much.

The greatest amount of admissions have been for ague. The cases which have come under my observation, have been extremely mild. Few have been ushered in by rigors, which are a marked symptom of the typical forms of this disease. The most of the cases have been ushered in merely by slight elevation of temperature. Quinine appeared to me to have little or no influence in controlling or preventing it. Preparations of iron seemed to have a greater effect. The number of men having enlargement of the spleen seemed to be enormous. They present themselves only when suffering from fever or when that enlarged organ deranges the functions of other organs by pressure or otherwise. One case of ascitis was admitted into the hospital, evidently due to the pressure of an enormous spleen on the blood-vessels of the abdomen; another case which proved fatal, evidently resulted from the same cause. The left ventricle of the heart was hypertrophied and dilated, with patency of the mitral valve, subsequently followed by œdema of the lower limbs (probably caused by that law of compensation which prevails extensively in the animal economy). The application of biniodide of mercury ointment over the enlarged organ appears to have some effect in reducing its size.

It is a remedy greatly extolled by Dr. Maclean. Its *modus operandi* seems, as far as I could make out, to be that of a counter irritant.

The admissions for boils and ulcers have been slightly decreased. The latter is usually a sequence of the former. The boils have presented a languid character, and might be justly but indirectly attributed to the influence of climate.

Contrary to what might have been expected, the admissions for diarrhœa and dysentery have been comparatively few and generally presented a mild form, easily amenable to treatment.

The admissions for the diseases of respiratory organs have likewise been few, but they have been rather severe cases, both lungs being implicated; all have made a good recovery except one which proved fatal in the early part of the year.

The admissions for venereal affections have slightly decreased in number, but it is extremely difficult to say how much it prevails amongst the men, as they seem to be very reluctant to present themselves at the hospital; no doubt, partly through shame and partly from viewing it as a slight affection, which they themselves might cure by medicines which they can obtain in the bazars. The amount of the admissions, therefore, cannot be taken as a

criterion of the extent of the disease. Two men suffering from gonorrhœa did not come to the hospital until a severe attack of orchitis had supervened in one case, and retention of urine in the other. There is a great want of a lock-hospital in this station, as the prostitutes are not under medical surveillance, it cannot, therefore, be well ascertained how far the disease may extend amongst them.

Two cases of acute nephritis attended with general œdema were admitted into hospital and are now progressing favourably. A case which was admitted into hospital as an ordinary case of fever, was treated as such for a couple of days, when it was ascertained that the fever was continuous, and that the patient complained of dull pain in the right lumbar region, which led to the examination of his urine. The urine was slightly albuminous, however, the sediment, which was very copious, had all the appearance of *chyle* or *pus*. In the absence of a microscope, the *pus* was readily detected by a simple chemical test. The abscess having found an outlet in the ureter and the treatment being simple, recovery has been perfect.

The number of admissions for contusions, although great, appears to be less than in the preceding year; they have been generally of a slight nature. The only serious accident which seems to have occurred, was a compound fracture of both bones of the leg opening into the ankle joint. Erysipelas supervened, but after running a course of six or seven days, subsided. The case is now progressing favourably.

No operation of any importance seems to have been performed during the year. Causes of death seem to have been from exhaustion supervening upon debility and diarrhœa, and from asphyxia.

The lines of the regiment appear good and well suited to the climate.

SANITARY REPORT BY THE SENIOR MEDICAL OFFICER OF THE STATION OF JACOBABAD.

In my reports of this station for the years 1869-70-71, I have mentioned the principal points worth noticing. The deductions to be drawn are plain, viz., that Jacobabad is the most unhealthy station in the Bombay Presidency: that the troops stationed here are much below par in health, and succumb easily when attacked by diseases of the vital organs: that they are predisposed to contract low and fatal forms of disease, and that they annually die in large numbers: that a large number of men become prematurely old, that many European officers of the different regiments have had to give up lucrative appointments or have lost health permanently, or have died. Were sanitation of the station attended to, to its utmost, still this station will remain very unhealthy owing to natural and irremediable causes; still proper sanitation is nevertheless necessary. That troops thus situated might prove (without any fault of their own) unequal to a prolonged and severe campaign is self evident, and does not require medical men to foretell it. But I consider it my duty to beg of the Inspector General, Indian Medical Department, and the Sanitary Commissioner of the Bombay Presidency, to represent to the proper authorities the state of health of the local troops, with the object of obtaining for them change of stations in their tour to healthier places, as that is the only remedy. During the year 1872 the deaths amounted to 33 per cent. exclusive of those that died while on outpost duty and on leave. During the years 1869-70-71-72 the total strength of the garrison and the deaths amounted, respectively, to 5,905 and 199, or in the proportions of 100 to 3.37. The average mortality of the Native Army (in which the high death rate of the garrison is included) from 1865 to 1871 inclusive is 94. In other words, for every two men that die in the Native Army generally (inclusive of this garrison) seven men die out of the troops stationed at Jacobabad. This state of things is altogether owing to the effects of the permanent location of these regiments in the most unhealthy station in the presidency.

During the year 1872 the total admissions amounted to 3,056 or 188 per cent. to strength. Of these 1,765 were from malarious fevers or 103 per cent. to strength. This station is placed in the centre of one of the most malarious regions: it is 40 feet below the level of the bed of the river Indus, the ground gradually rising to the east; on the north and west about 60 miles off are high ranges of hills; on the south, but at a greater distance, are also high ranges of hills which have the effect of cutting off the south-west trade winds; as a rule the atmospheric movements are slight, except when dust storms occur. From July to September inundations occur, making the country around a hotbed of malaria. These annual inundations were of unusual extent in the months of July and September 1872. Jacobabad was surrounded by water on all sides and was saved with great difficulty from total submergence; as it was, it found its way into the lines of Jacob's Rifles, doing much damage; it got on the parade ground in front of the Sind Horse lines. This station was thus cut off from all others, the Post bags and travellers had to come and go in boats. Added to these natural defects there are artificial causes which I have noticed in former reports. I addressed a letter, No. 9 dated 17th September 1872, to the Brigade Major, pointing out certain defects in the station in a sanitary point

of view : a copy of this letter and its reply are enclosed. This year, to increase as it were the stagnation of air caused by the lower branches of trees and undergrowth of sorts, on a large piece of land within camp limits quantities of jowaree were allowed to be grown. The malarious fever caused about 12 per cent. more admissions this year than last, not only that the numbers were greater this year, but the type was lower and men took longer to recover and became more debilitated after an attack.

Dysentery.—Fifty-seven cases of dysentery were admitted this year against 29 in 1871, or nearly double ; three of these proved fatal. The increase cent. per cent. nearly is attributable to the great amount of damp this year.

Pneumonia.—As usual many cases and deaths occurred from this disease in the cold months of the year: sixty-seven were admitted and nineteen proved fatal. Were men in better health they would not suffer from the adynamic latent form of pneumonia as they do, nor would so many prove fatal.

Europeans suffered more from malarious fevers this year than in the three previous years of my stay here, although more went on privilege leave than on former occasions. Of all the officers that I found here, on my first joining in April 1869, there are now only 4 who have not had to go to Europe ; some out of those that joined after me have also had to go, and some that were on sick leave at the time of my joining had, after their return to duty, to go again on sick leave. Six Europeans had to go this year on sick leave, two left on private affairs to Europe, one of whom could have got sick leave if he wanted it, and there were three more at least who could easily have got sick leave. All the good that change of air did to officers who went on privilege leave, was undone by the unhealthy climate to which they had to return. Were they allowed to accumulate their privilege leave for 2 years, they could go away every other year for the whole of the unhealthy season, and lessen the necessity of going to England on sick leave.

Return of Temperature and Rain for the year 1872 at Jacababad.

Months.				January.		February.		March.		April.		May.		June.	
				Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Temperature	...	...	...	70°	34°	85°	34°	104°	46°	108°	58°	109°	74°	110°	77°
Rain	...	...	...	.10		...		.48		.56		...		...

Months.		July.		August.		September.		October.		November.		December.		Total.	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Temperature	...	105°	82°	100°	80°	97	70	96°	60°	93°	34°	76°	43°	...	...
Rain	...	.57		3.71		1.36		...		...		...		6.78	

Table of Temperature for the year 1872.

Cold Months.				Hot Months.			
January 1872.	Mean	Max.	79°F.	April 1872.	Mean	Max.	98°F.
February "				May "			
March "				June "			
October "				July "			
November "				August "			
December "				September "			
Lowest Register marked 34°F.				Highest Register marked 110°F, in shade.			

RETURN showing the Admissions and Deaths from Aque from 1847 to 1871 at the Station of Jacobabad.

Average	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	Average 1847 to 56.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	Average 1857 to 66.	Average 1847 to 66.	1867.	1868.	1869.	1870.	1871.	Average 1867 to 71.	Average 1847 to 71.
1st Sind Horse.																														
(Strength)	799	801	714	589	749	743	738	751	732	748	736-00	609	470	751	702	450	472	523	510	508	501	549-60	642-80	501	493	381	357	445-50	692-44	
Admissions	234	156	116	639	269	742	1,101	248	259	409	410-30	713	197	458	448	324	457	463	406	395	652	454-30	432-30	387	415	428	327	448-0	525-20	
P. C. Admissions to	29-28	19-47	16-24	91-68	35-91	99-86	149-59	33-02	39-48	54-67	569-20	103-33	41-91	60-98	63-81	72-00	103-17	88-52	79-60	77-75	130-15	829-22	699-21	77-24	82-83	86-81	91-59	379-90	711-32	
Deaths	4	3	3	2	..	4	6	3	3	4	3-20	1	1	1	..	..	2	..	4	1	..	1-00	2-10	..	..	1	2	..	1-56	
P. C. Deaths to Admis- sion.	1-70	1-92	2-55	37	..	53	54	1-20	1-03	97	10-81	1-14	50	21	..	..	41	..	98	27	..	25-10	17-95	..	..	23	20	10-40	1-85	
2nd Sind Horse.																														
(Strength)	724	804	514	518	745	726	735	712	729	749	695	750	751	763	792	805	655	493	517	515	505	635	665	507	498	494	365	353	443	621
Admissions	192	65	154	379	293	604	1,010	412	459	560	415-8	949	714	581	426	366	673	373	270	358	679	533-9	474-8	502	463	354	427	219	393-0	45-4
P. C. Admissions to	26-5	8-0	29-9	73-1	39-3	83-1	137-4	57-8	62-9	78-7	59-7	126-5	95-0	76-1	53-7	44-2	144-7	67-5	52-2	69-5	134-4	83-9	71-2	90-0	92-9	71-6	116-9	62-0	88-7	73-7
Deaths .. .. .	..	..	1	1	..	3	10	6	1	1	2-3	7	3	3	1	2	2	1	9	..	..	2-8	2-5	1	3	5	3	1	2-6	2-5
P. C. Deaths to Admis- sion.	..	..	0-6	0-3	..	0-5	0-9	1-4	0-2	0-2	0-4	0-7	0-4	0-5	0-2	0-5	0-3	0-3	3-3	..	..	0-5	0-4	0-2	0-6	1-4	0-6	0-4	0-6	0-5
3rd Sind Horse.																														
(Strength .. .. .)	..	..	..	..	..	..	..	..	..	..	..	..	561	774	895	454	506	531	522	521	510	511	569-5	499	497	396	342	411	524-2	..
Admissions .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	392	558	471	159	381	382	241	225	624	397-2	403	338	579	419	434-7	407-7	..	..
P. C. Admissions to .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	69-87	74-09	58-50	35-02	75-29	71-33	46-16	43-18	123-32	105-47	68-30	80-96	68-0	189-21	122-51	115-17	78-12	..
Deaths .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	4	1	..	..	2	..	2	1	..	..	1	..	1	4	2	1-7	1-2	..
P. C. Deaths to Admis- sion.	..	..	..	..	..	..	..	..	..	..	..	..	0-71	0-12	..	..	0-39	..	0-38	0-19	..	..	0-18	..	0-20	1-30	0-58	0-52	0-28	..
30th Regiment N. I.																														
(Strength .. .. .)	..	..	..	..	..	..	..	..	..	..	..	..	336	616	726	658	712	712	712	712	712	700	659	767	553	588	563	617	647	..
Admissions .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	112	431	593	220	479	580	559	450	883	653	499	105-8	637	616	529	710	559	..
P. C. Admissions to .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	33-3	78-0	81-6	67-1	67-1	74-4	78-5	67-4	124-0	98-2	72-8	137-9	115-0	104-7	98-9	112-4	84-0	..
Deaths .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	8	1	2	1	2	2	1	1	..	1-70	1	1	4	5	2-3	2-0	..
P. C. Deaths to Admis- sion.	..	..	..	..	..	..	..	..	..	..	..	..	..	1-62	0-106	2-200	0-200	0-377	0-357	0-200	0-200	..	2-34	0-943	0-157	0-97	0-94	1-60	1-76	..

RETURN of Temperature for 25 years (1847 to 1871) at Jacobabad.

Months.	1847.			1848.			1849.			1850.			1851.			1852.			1853.			1854.			1855.			1856.			1857.			1858.		
	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.				
January	79	60	42	69	56	44	80	56	32	65	50	30	74	58	42	70	52	34	66	57	49	89	75	61	68	56	45	81	64	48	62	57	53	...	...
February	76	59	42	82	63	44	85	65	46	78	67	35	84	69	54	79	61	44	83	69	56	82	66	50	77	67	57	82	68	53	84	69	54	...	...
March	94	79	64	97	79	62	96	73	50	...	...	...	89	77	66	89	68	47	83	72	61	97	76	56	89	72	56	98	80	63	92	78	64	91	72	54
April	101	86	71	103	88	73	107	80	54	...	...	...	99	86	73	100	82	65	99	86	74	...	...	102	85	68	105	86	68	94	83	72	106	86	66	66
May	105	90	78	114	97	80	115	90	65	109	93	77	103	92	81	104	90	77	106	93	81	110	100	90	107	93	80	110	96	82	110	95	80	111	88	87
June	104	93	82	116	103	91	111	90	71	108	101	94	105	95	86	111	97	84	106	99	93	109	87	93	108	102	96	...	...	...	107	97	88	109	95	82
July	98	89	80	114	101	88	106	88	71	106	97	89	106	96	88	105	96	88	105	96	88	106	96	88	106	93	81	106	94	83	108	99	91	105	95	85
August	96	88	80	109	99	89	102	82	62	102	94	87	104	95	86	98	91	84	100	92	84	100	90	81	104	92	80	108	104	96	101	97	94	97	92	96
September	96	88	80	102	93	84	99	85	71	103	94	86	100	90	86	100	89	78	101	91	82	104	93	82	104	89	75	97	83	70	96	93	94	97	89	81
October	95	83	72	100	75	51	99	85	52	101	86	71	95	80	75	96	84	72	94	82	70	96	79	62	96	83	71	94	81	69	89	79	70	85	83	81
November	82	59	36	88	70	53	80	65	50	91	74	57	94	76	58	94	75	56	89	73	58	90	79	58	86	72	58	86	68	51	78	69	61	84	70	56
December	75	60	48	...	...	...	64	52	40	78	63	48	72	58	64	64	59	54	79	65	51	71	63	55	75	62	50	72	61	50	71	65	60	69	59	50
Mean 1st May to 31st October.	99	88	68	109	94	80	105	86	65	104	94	84	102	91	82	102	91	80	102	92	83	104	90	82	104	92	80	103	91	80	101	93	86	98	90	88
1st November to 30th April.	84	61	50	87	71	55	85	69	45	78	62	42	85	70	59	78	66	50	83	70	58	85	71	56	82	69	55	87	71	55	80	70	60	87	71	56
Whole year....	91	71	54	93	82	67	90	77	50	90	78	63	93	80	70	90	78	65	92	81	70	94	80	69	93	80	67	95	81	67	90	80	73	92	80	72

RETURN of Temperature for 25 years (1847 to 1871) at Jacobabad—continued.

Months.	1859.			1860.			1861.			1862.			1863.			1864.			1865.			1866.			1867.			1868.			1869.			1870.			1871.		
	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.	Mean.	Min.	Max.		
January	70	58	47	66	51	37	76	61	46	88	66	44	78	58	39	86	62	38	74	61	48	60	56	52	70	57	44	68	49	30	67	54	41	72	53	34	75	56	37
February	76	65	54	87	61	35	86	69	52	90	68	46	94	68	42	88	63	38	88	69	50	68	62	57	86	67	48	79	62	46	79	65	51	86	64	43	89	67	45
March	...	...	...	94	77	60	96	71	53	96	74	52	96	71	46	98	74	50	94	73	53	79	71	64	95	77	60	94	71	48	86	70	55	88	72	56	101	75	50
April	101	85	70	102	86	70	112	93	74	107	89	71	102	65	49	99	82	66	113	93	73	88	84	80	98	83	69	102	84	66	86	78	70	106	85	64	104	83	63
May	107	93	80	106	91	77	112	97	82	108	90	72	108	90	72	110	92	74	118	99	80	108	90	73	110	94	78	107	90	74	117	94	72	114	93	72	109	90	72
June	110	97	85	108	96	84	121	103	86	112	97	83	110	97	84	111	97	83	105	87	70	110	97	84	113	96	80	107	97	87	112	95	79	109	97	86	109	96	83
July	109	98	88	109	96	83	100	76	52	108	97	86	106	96	86	104	95	86	106	99	92	105	97	89	106	96	86	104	93	82	107	94	82	103	95	88	105	94	83
August	100	91	82	96	90	84	100	75	51	104	94	84	100	92	84	102	92	82	98	90	90	99	91	84	102	92	83	102	92	83	104	94	85	102	93	85	104	90	79
September	95	87	70	100	90	80	104	92	80	102	92	83	98	82	66	99	84	70	92	88	85	96	84	72	98	87	77	106	86	73	98	88	79	95	87	79	99	85	72
October	89	79	69	97	81	65	96	78	60	99	78	58	92	75	59	91	77	63	87	82	77	91	77	63	88	74	60	90	74	58	92	73	55	91	77	64	89	79	69
November	78	69	58	92	65	38	98	67	36	86	63	41	92	73	54	89	60	32	76	68	60	85	67	50	81	66	51	80	67	55	80	64	48	86	68	50	85	63	42
December	68	60	52	89	58	28	86	65	44	80	59	38	68	55	42	72	58	45	63	57	52	74	59	44	69	57	45	75	58	41	74	54	34	72	60	48	69	53	37
Mean 1st May to 31st October.	101	90	79	102	90	78	105	86	68	105	91	74	102	88	65	102	89	76	101	90	82	101	89	77	102	86	77	102	88	66	105	89	65	102	90	79	102	89	76
„ 1st Nov. to 30th April.	78	67	56	88	66	44	92	71	50	90	69	48	88	65	45	88	66	44	84	70	56	75	66	57	83	67	52	83	65	47	79	64	49	85	67	49	87	66	45
„ Whole year	89	78	67	90	78	61	98	78	58	92	80	61	90	76	55	90	77	60	92	80	69	88	77	67	92	76	64	92	76	56	92	76	57	93	78	64	94	77	60

YEARS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Amount Total.
1847.	6 Hours Rain.	.....	.....	.....	Little Rain.	.....	.....	.....	.....	.....	.....
1848.	1-00 Rain 27th, 28th, 29th.	.....	Slight Rain	.....	.....	.....	.....
1849.	Few drops.	.....	2-00	.....	.....	1-50	.....	.....	.....	.....	2-50
1850.	2-00
1851.	Rain on 4th and 15th.	.....	Few showers.	.....	Little Rain.	Rain on 11th, 20th, 30th, and 31st.	.....	.....	.....	Heavy Rain on 21st.	.....	.....
1852.	Rain 23rd and 24th.	Few showers.	Occasional showers.	.....	.....	Occasional Showers.	4-00	.....	.....	.....	.....	4-00
1853.	Rain on 12th.	Rain fell 23rd.	Rain 17th, 19th, and 21st.	.....	Heavy Rain 2nd.	.....	.....	.....	Rain Fell 21st.	Rain 15th, 24th, and 29th.	.....
1854.	Little Rain.	Considerable fall of Rain on 22nd.	.....	.....	Few drops 29th.	.....	.....	.....	.....	Rain 29th.	Rain 12th and 19th.	.....
1855.	Rain on 7th, 8th, 9th.	.....	.....	.....	Slight Rain 29th.	4-00	.....	Slight Rain 9th.	.....	Little Rain 26th.	.....	4-00
1856.	Rain 3rd.	Rain 13th.	.....	.....	.....	.....	.....	.....	.....	0-50
1857.	Heavy Rain 23rd.	.....	.....	3-50	.....	.....	.....	.....	.....	3-50
1858.
1859.	Rain fell 12th.	.....	.....	0-22	.....	2-00	.....	Rain 29th.	Little showers 23rd Do. 27th.	2-22
1860.	Rain 29th.	Little Rain 11th.	Some drops 19th, 29th.	0-46	.....	Few showers.	.....	.....	.....	.....	.....	1-16
1861.	0-04	1-49	.....	0-30	.....	0-10	.....	0-35	2-53
1862.	1-68	.....	.....	.....	.....	3-05
1863.	0-15	.....	.....	.....	.....	0-15
1864.	1-10	.....	.....	0-31	.....	.....	.....	.....	1-41
1865.	0-72	.....	.....	0-10	.....	.....	.....	1-07	3-93
1866.	0-15	0-16	.....	2-38	0-10	.....	.....	.....	3-76
1867.	0-19	0-91	.....	.....	.....	.....	1-25
1868.	1-50	.....	.....	.....	.....	.....	.....	.....	1-50
1869.	2-57	0-63	2-06	0-30	.....	.....	8-29
1870.	0-45	.....	1-88	0-63	.....	.....	0-20	3-97
1871.	0-35	0-62	.....	.....	.....	0-9	1-31
Average.	0-17	0-3	0-11	0-4	0-24	0-8	0-53	0-57	0-19	0-2	.....	0-7	2-04

Average for 11 years (1861 to 71) 2-83. Returns before 1861 are not reliable, as merely mention is made of there being rain on certain days without giving the actual quantities.

RETURN of Mortality from 1847 to 1871,

[illegible]

REPORT BY THE DEPUTY INSPECTOR GENERAL OF HOSPITALS, SIND DIVISION.

In the present report I have no mention to make of any regiments having left the Sind Districts, or of any new ones having come to it; neither have I to notice any changes in the disposition of the several corps serving in the province. One or two detachments were moved from the Sind Brigade during the rainy season, the circumstances attending which will give rise to some remarks further on; but as these all returned during the year to head-quarters, the actual position of the different regiments was not thereby affected. The several corps therefore stand precisely as they did this time last year, and are—

27th Regiment N. I. (or 1st Belooch.)	Kurrachee.
29th " " (or 2nd " ")	Haidarabad.
1st Regiment Sind Horse.	} Jacobabad.
2nd do. do.	
3rd do. do.	
30th do. N.I. (or Jacob's Rifles).	

2. On examining the returns from the several hospitals, it appears that while there is a slight decrease of 243 men in the strength of the troops serving in the district, there is a marked increase in the sickness, amounting to about one-fifth, as shown in the number of admissions for the past year compared with that of the previous one. Also in the matter of deaths these are considerably in excess, the proportion being nearly one-fourth greater: on comparing the statement Appendix E with a similar one marked A for the year 1871, this will be at once apparent. From these it will be seen that the admissions numbered 3,979 in 1871, whereas for the past year they have amounted to 5,040 or fully one fifth more for last year than for the previous one. But the deaths show still more unfavourably, 57 are recorded for the year 1871, and 74 have occurred during the year under report. It only needed two additional deaths to have brought up the mortality to exactly one fourth more than it was in the previous year: now these figures mean a good deal. They plainly show that while the health of the troops serving in Sind was far from satisfactory during the year 1871, it has been much less so for the one under review, and the causes are not far to seek. They may be stated generally under three heads. First, the unusually heavy fall of rain; second, the inundations of the river Indus, to which must be added the bursting of several bunds in the upper provinces; and third the invasion of dengue fever.

3. With regard to the first, Sind, as is well known, has no monsoon. It is not gladdened, as are other parts of India, by periodical rains. What does fall, is regarded more as a matter belonging to the chapter of accidents than as an event to be expected and longed for. To mention the military stations only I will contrast the amount registered at each for the years 1871 and 1872; of which, for the former, the quantity at least as regards the two latter stations, must be considered normal:—

Locality.			1871.	1872.
			In. cents.	In. cents.
Kurrachee	...	...	6 50	8 20
Haidarabad	...	...	2 98	8 63
Jacobabad	...	...	1 31	6 78

This may be taken as a fair sample of what has fallen throughout the province, for every part of it has been visited more or less and in some places to a much larger extent. At Mittee, in the Thur and Parkur District, I found upwards of 14 inches had been registered. An amount of rain like this is a blessing not unattended with several drawbacks; for in a nearly flat country as the alluvial districts of Sind are, where the surface is not favourable to drainage, and, moreover, is in many parts below the level of the river, it is surprising how an inch or two of rain will in a short time cover large tracts with water. This remains until absorbed or evaporated; and if additional rain happen to fall at intervals, this drying up is arrested; the soil becomes thoroughly saturated; minute vegetable and animal organisms are abundantly developed, and the hot autumnal wind acting upon a large amount of moist surface charged with these conditions, malaria, proportionate to the activity and extent of the agencies at work, will be generated throughout the district.

4. The second factor, and the one mainly responsible for the increase of sickness in the province, has been the inundation of the river Indus, which was greatly aggravated by the giving way in several places of some of the larger canal bunds. The river began to rise in May, and rapidly increased. In July it burst over the country above Kusmore, and towards the end of that month the amount of water which made its appearance in the neighbourhood of Jacobabad seriously alarmed the inhabitants for its safety, shortly afterwards the whole country round was in flood; communication with Shikarpur and Sakkhar was entirely cut off, except by boat, and continued so for nearly three months. During a portion of this time the water partially flooded the parade ground and surrounded the Rifle lines, and almost swamped the married quarters of that regiment. Considerable damage likewise was done to several of the officers' compounds. In short, matters had proceeded so far that I am told it was only through great exertion on the part of the authorities, and the embankments for the most part remaining firm and intact, that the entire station of Jacobabad was saved from very serious injury. It was several months before this large body of water disappeared, absorption and evaporation being the only means for its disposal. As an instance of the difficulties attending progression in these parts, even so late as the setting in of the cold season, I may mention that in the beginning of November, the 2nd Regiment Sind Horse was ordered to Sakkhar on the occasion of the Viceroy's visit. The distance is 49 miles, but owing to the flooded state of the country, the route was rendered so circuitous as to extend the march to 60 miles. And even by the middle of December, when I passed up from Shikarpur, a portion of the road was still impracticable, and much of the land also on either side was under water, for the most part stagnant and offensive, and containing numbers of dead fish in all stages of putrefaction. In Haidarabad likewise, the unusually high condition of the river did not fail to exercise injurious effects upon the inhabitants and troops stationed there. The low land surrounding that part of the plateau on which the camp is placed, and specially that portion situated to the west of the Fort, which is every autumn more or less marshy, were entirely inundated; and there being in this region a great amount of vegetation and numbers of trees, the immense mass of decomposing organic matter left on the surface, after the subsidence of the water, proves a sure and fertile source of malarious disease. And during the past year the climate towards the latter part, has unfortunately been exactly such as to further the development and dissemination of the malarial poison. Cold is supposed either to kill, or keep in abeyance this poison, or to brace the nervous system with some special power to withstand its effects. But last year, the usual cold which prevails in November and December, particularly in Upper Sind, was absent: the latter portion of the year was unusually mild, the sun's power during the day time considerable, and the winds being light and variable, and even at times scarcely perceptible. The circumstances were all specially favourable for the production of malaria, as also its reception by those whose impaired health or low state of vital energy, rendered them predisposed to its effects.

5. The last element which has contributed to swelling the returns of sickness for the year under review, in at least two out of six regiments serving in Sind, has been dengue fever. This disease was imported into Kurrachee from Bombay during the monsoon, most probably by one of the weekly steamers. It began to show itself in the native town about the beginning of July; and shortly afterwards some cases presented themselves for treatment at the dispensary and civil hospital. The type of disease was mild on its first appearance. As it continued to increase in the town, precautions were taken to prevent its reaching camp, by prohibiting the sepoys to go into the city. Although this in some measure may have delayed its progress, yet, not long afterwards, some cases were reported in the bazaar and outlying huts of the followers. The disease spread and in the early part of September broke out in the lines of the 27th or 1st Belooch Regiment. During that month 71 cases were admitted, and in the one following as many as 276. In December the disease was on the decline, there being only 63 admissions from this cause. A total of 412 cases, however, out of a strength of 668, was met with. There were no casualties, nor were any of the European officers affected. The disease was next heard of at Haidarabad. It made great havoc in the city—fully two-thirds of the population from first to last being smitten by it. It had been raging, however, for upwards of a month in the town before any cases occurred in the native regiments, the 29th or 2nd Belooches. In September, much about the period of its appearance in the regiment at Kurrachee, the first cases presented themselves at the hospital. October furnished the largest number, and it died out towards the end of November. Although the disease visited the native town much more severely than it did that at Kurrachee the number of cases observed in this regiment were considerably less than in the other one. The strength of both being about equal, the returns show 175 cases in the 2nd Belooches and 3 European officers against 412 in the 1st Regiment and no officers. As in the Kurrachee regiment the disease was not marked by any casualty.

6. While on the subject of dengue, I may here observe, that a contagious disease, as this one apparently is, having manifested itself so decidedly in Kurrachee, it was of course to be expected that, with the frequent railway communication between that place and Kotri,

on one side of the Indus, and Haidarabad on the other, it would not be long until its presence would be felt in both these localities, which in fact occurred. It was natural likewise to suppose that the traffic up the Indus, especially by means of the passenger steamers, would certainly convey the disease to the several places of contact on its banks. This came to pass as regards Sakkar only. This place has a considerable trade, and here steamers generally remain for a day or more during their passage up and down. Two hundred and thirty cases of dengue came under treatment here, and many others also were affected with it but were either too ignorant or too indifferent to seek medical aid. On the other side of the Indus, exactly opposite Sakkar, lies the considerable town of Rohri. Hourly intercourse by steam-ferry is kept up between the two. Finding that not a single case of dengue had been treated at the dispensary there, I enquired of the authorities with respect to its presence in the town, and was surprised to learn that the disease was quite unknown in the place. A singular circumstance, if correctly stated. Shikarpur, which is 23, and Jacobabad, 49 miles distant from Sakkar, each of them forming important links in the chain of communication and traffic to the northward, entirely escaped. With the exception of the places I have already mentioned, and three others, not far from the Indus, the disease seems to have passed up the river, leaving Sind comparatively untouched.

7. Having referred to the general causes which have exercised a baneful influence on the health of the troops serving in Sind during the past year, and occasioned an increase of one fourth nearly in the deathrate, I proceed to mention the total average strength; numbers treated and died; the daily average sick; the percentage of treated to strength, of deaths to strength, of deaths to treated; of the diseases affecting the men as a body, and the proportion in which the castes of Hindoos and Mahomedans suffered; then the numbers of each who have died out of hospital and been invalided; the number of recruits joined during the year; and, lastly, the history of the several regiments. In the appendices to this report marked, respectively, B, C, D, E, these and other matters are given in full detail, and it will, therefore, be necessary to only summarise them here very briefly.

8. The average strength of the troops serving in Sind for the year 1872 amounted to 2,844, which is less by 243 than in the previous year. Including those remaining at the close of 1871, the total number treated has been 5,216. The average daily sick per cent. to average strength was 4.6; while the ratio per cent. to admissions to average strength amounted to 177.2. The deaths in hospital numbered 74 which gives a ratio of 1.4 deaths to treated, and a percentage of 2.6 to the average strength. The previous year showed a percentage of 1.8, which contrasts unfavourably with the ratio for the whole native Army, and now for the year just concluded this will be still more apparent, as the mortality has been nearly one fourth in excess of what occurred in the preceeding year.

9. In commenting on the diseases affecting the troops as a body, it is natural in a country like Sind, especially in its upper portion, where not only malaria spreads itself over a much wider surface and in a more persistent manner than in Lower Sind, but where also the troops stationed there exceed those at Haidarabad and Kurrachee, in the proportion of 7 to 2, to look for a larger number of admissions from fever. And such is the case. A total of 2,654 cases of malarious fever have been treated, which divided through the average strength 2,844 is equal very nearly to every man of the Force having been once affected during the year. In my last report, 2,378 cases of malarious fevers are noted in a strength of 3,087 with a mortality of 20, or a percentage of 0.6 deaths to strength. For the year under review, while the sickness from this cause has been greater, the mortality has been less, 17 deaths having occurred, or equal to 0.5 per cent. on the average strength.

10. Of the remaining diseases classified as "General," under the nomenclature of 1868, Sec. A, dengue holds an important place—589 cases having come under treatment; but, as I have already mentioned, being confined exclusively to the two Belooch regiments stationed at Kurrachee and Hyderabad. The disease ran its course without a casualty. Measles have been seen, but that is all: no epidemic of this disease has occurred. Four cases only are noted; three of them at Kurrachee, and one at Jacobabad. Under Sec. B, of this class, syphilis is the only disease requiring special notice: 50 cases of primary and 44 of the secondary affections having been met with. Out of these 1 death occurred. It may appear somewhat remarkable that of this total of 94 cases of syphilis debited to the six regiments serving in Sind, 66 of these are divided between the two Belooch regiments, and that in the case of one of them, quartered at the station where there is a lock hospital, it should return the largest number! The frequency of this disease consequent on the habits of the people is much greater among Mahomedans than Hindoos, but as the number of this class in the regiments of the Sind Brigade at Jacobabad compared with that in those of the two Belooch regiments, is as 3 to 2, the comparatively few cases which appear in the records of the Upper Sind Force would seem to completely upset this opinion. But it is not so, and the reason is not far off. In my last year's report, when speaking of the smallness of the hospitals belong-

ing to the regiments—Sind Horse—compared with their numerical strength, I remarked that in consequence of the latitude permitted to the men—and which is of long standing—none but cases requiring to be kept in bed come to hospital, but that this system, bad for many reasons as it obviously is, compensates for the deficiency of accommodation. By this arrangement, however, many cases of syphilis altogether escape detection and record. The men have recourse to native remedies; in most of them the disease is patched up for a time, only to break out years afterwards in one or other of its Protean forms: while others, deeming themselves less fortunate, become daily more incapable of performing their duties, until at length they can no longer conceal their complaint, and are received into hospital in an advanced stage of the disease. From what I learnt from the medical officers at Jacobabad, I have every reason to believe that syphilis is as rife among the men of the Sind Horse as it is in those of the Belooch regiments, and the statistics of this particular disease as it affects them are consequently worthless.

11. Diseases of the “Nervous system” require no special remark; neither do those of the “Eye,” beyond mentioning that conjunctivitis prevailed to a considerable extent, 110 cases having been recorded. But this need excite no surprise, considering the constant glare, dust, and sudden changes of temperature peculiar to the climate.

12. The diseases of the “Respiratory” and “Digestive systems,” however, are next to those of malarious origin, the most important that have occurred. In the former, bronchitis takes the lead: 106 cases are recorded and 5 deaths. But the most fatal of any belonging to this class is pneumonia: 81 cases have been met with, out of which 21 deaths have occurred. No single disease which has affected the troops in this division has been followed by so severe a loss and which amounts to a ratio of 24·7 to the number treated, and to 0·7 to the total strength. Almost the entire force of this disease has fallen on the Jacobabad regiments. In this Brigade alone 77 cases are recorded and 19 deaths, being the insignificant number of 4 cases and 2 deaths to the Belooch regiments at Kurrachee and Hyderabad. This is almost a repetition of what happened in the previous year. The two Belooch regiments showed only 5 cases of pneumonia and 1 death, while the ones at Jacobabad returned 89 cases and 22 deaths; and the resemblance becomes still more apparent on comparing the ratios to death to treated and to strength, which gives precisely the same figures, viz., 24·7 and 0·7 as are obtained for the year 1872. The greater amount of cold which prevails in the early morning during the winter months at Jacobabad than at either Kurrachee or Haidarabad, quite fails to account for the immense disparity witnessed in the frequency and attendant mortality of this disease between Upper and Lower Sind; and which two successive years—the one remarkable for its absence of rain and the ordinary cold season, the other equally so on account of an unusually heavy fall succeeded by a very mild winter—place beyond dispute. The extremes of temperature, from a high solar heat to often below the freezing point, which usually prevail at Jacobabad in the winter months, cannot, therefore, taking into consideration the dissimilar climatic conditions of the last two years, be made solely responsible for the much greater prevalence of diseases of the lungs, attended with fatal consequences at that station than in those nearer the coast. That it is an exciting cause, and a powerful one in ordinary seasons, cannot be doubted, but without the existence of a very strong *predisposing* one, it would be comparatively harmless. In both years, however, as for many previous ones, this predisposing agent has been ever present and unceasingly at work undermining the constitutions of a large proportion of the men composing the Brigade; and slowly, but no less surely, inducing that peculiar cachexia, marked by anemia, loss of muscular strength, and nervous prostration, which render those thus affected especially susceptible to existing causes of disease, the most common of which are atmospheric influences; and inflammatory action once set up in such subjects invariably assumes a low adynamic type, in which the best recognised medicines, with a free use of stimulants, are too often found to be powerless in averting a fatal issue. I need hardly add, that this subtle predisposing agent which thus saps the health of the soldier in Upper Sind is malaria, and which, as I endeavoured to show in my last year’s report, may be mitigated but can never be eradicated. The remaining diseases of the respiratory system still to be noticed, are few and unimportant. Pleurisy has been the most prominent but, as was the case in the previous year, has been confined chiefly to the 27th Regiment N. I., at Kurrachee; 2 casualties out of 9 admissions have occurred in that hospital from this disease.

13. Among the affections of the digestive system, dysentery is the most important. It has yielded the highest number of admissions under this class of diseases, 89; but the mortality has been low, amounting to only 4; while the two Belooch regiments show almost the same number last year as for the previous one: those at Jacobabad have nearly doubled theirs. But this is not difficult of explanation after the account I have given in the 4th paragraph concerning the state of the station and surrounding districts, caused by the inundations of the Indus. Diarrhœa, likewise, has, owing to the extreme dampness of the past season, returned a larger number of cases than usual. From this disease, 2 casualties have occurred out of 78 admissions. Hepatitis furnishes only two cases, but both of them were fatal;

while diseases of the spleen show a total of 30 without any death. Diseases of the urinary system and organs, and of the generative system, may be noticed together. These have yielded 81 cases and no deaths, which favourably contrasts with the admissions of the previous year, which numbered 132. There only remains to notice diseases of the organs of locomotion of the cellular and cutaneous systems and injuries. These of course furnish a considerable number of admissions; in all 1,068, and the deaths have amounted to 8, of which 5 were occasioned by debility. In the year before last 1,200 admissions are recorded from the above causes, but followed by only 2 deaths, also from debility.

14. Before dismissing the subject of the diseases which have affected the troops in Sind as a body, I must mention one which, although in certain forms is of common occurrence all over the Bombay Presidency, yet in this province, and partially so in Cutch, is not only more prevalent, but frequently assumes such peculiar characteristics, as to have earned for itself a distinct name of "Sind Sore." In the regimental returns these are entered under the general head of Boils and Ulcers; for even in the worst and most intractable form of this affection, it commences generally as a painful boil: and, after a period more or less protracted, leaves an ulcer having certain peculiarities in its appearance, progress, duration, and, especially, resistance to remedies. In 1871 boils and ulcers numbered 359: during the past year they have amounted to 419. For the most part, these were ordinary boils and ulcers not distinguishable from those met with elsewhere, except, perhaps, in the matter of general irritability and sluggishness of action. But the others, of which I wish now to speak, the Sind sore *par excellence*, though at its commencement, and for sometime after, differing little from an irritable and ill-conditioned boil, yet becoming influenced by climate and local circumstances, also by the constitution or habit of body of the patient, it must, in its progress and subsequent course, be regarded rather as a distinct disease, and in this stage presents all the chief characteristics of the Delhi sore.

15. My attention has been lately directed to this matter by the Commissioner in Sind having forwarded me copies of correspondence on the subject of Delhi Sores from the Government of India. These included a despatch from H. M.'s Secretary of State, conveying a letter from General Lord Mark Kerr, stating that, as the result of his experience at Delhi, he believed that planting of trees and grass alleviate the disease known under the name of Delhi sore; and information was called for, as to how far the presence of trees, grass, and vegetation, generally, with judicious draining, would similarly alleviate the disease in this province called Sind sore.

16. In reply I stated that to some extent it was a matter for regret, that a disease concerning which information is sought should be named after a locality instead of being described and classified in accordance with its pathological history. And this was the more unfortunate, inasmuch as without this well-established method of recognition, other diseases of a kindred kind were liable to be confounded with it. Another source of difficulty was experienced in the fact that ulcers and boils of an obstinate and untractable character are not confined to Delhi, but are more or less spread over India and eastern cities generally. This would indicate that there is nothing in the complaint specially referable to Delhi, but that the cause must be searched for over a wide extent of country, exhibiting every shade and variety of topographical character, and with climates very dissimilar. With respect to the obstinate sores met with in Sind, there appears to exist much difference of opinion as to there being identical with the Delhi sore. Some consider them alike, others that they are nearly so, but modified by climatic influences; but the general verdict seems to favour the opinion that the ordinary Sind sore is essentially different from the Delhi one, at least in its earlier stages and during a portion of its subsequent course. At the outset and for sometime after, the disease usually presents the appearance of an ill-conditioned boil having many of the characteristics of carbuncle, attended with acute suffering, and remaining in a highly inflammatory and irritable condition frequently for several successive weeks. In this respect it is quite unlike the commencement and course of Delhi sore, which is not painful until after a considerable breach of surface has taken place, and even then the pain is comparatively insignificant, and never approaches that met with in the earlier stages of the Sind sore, which is of an intense lancinating character. And it is when this inflammatory condition has been reduced by appropriate treatment that the peculiar disintegration of the tissues occurs. And then commences the intractable and obstinate condition which in all its main features corresponds to the descriptions usually given of the Delhi sore. This is my opinion; and, I think, it is borne out by the observations of most of the medical officers who of late years have served in Sind and given their attention to the subject. Dr. T. Farquhar, a retired Surgeon Major of H. M.'s Bengal Medical Service, who has had considerable experience in Delhi sores and in those peculiar to Sind, also states that while the Delhi sore may exist separately in Sind, he considers the disease known as Sind sore to be "*furunculus*"—a severe form of the boils that are so very frequent in the rainy season all over India.

17. Assuming that the complaint as witnessed in Sind is, at least in its fully developed stage, sufficiently alike in its chief feature to the Delhi sore which, according to Lord Mark Kerr's experience, is alleviated so signally by the proximity of trees and grass, it will be expedient now to consider how far in like manner the presence of trees, vegetation, and cultivation of the soil, generally, have influenced the prevalence and practicableness of the Sind sore.

18. I entirely concur in the general principle enunciated, that to bring extensive tracts of barren and waste land under judicious irrigation and cultivation in connection with a good water-supply, careful and thorough drainage, and other well-ordered sanitary arrangements, would do much towards the removal of epidemic diseases generally; would also greatly mitigate the severity of epidemics, and by improving the general health of the inhabitants, would place them in a more favourable position to resist malarious poisoning and other debilitating influences, which, under existing circumstances, are too frequently met with, and which render the people susceptible to ailments of otherwise trifling import; and I have no doubt, if the above measures were scientifically and thoroughly adopted, Sind sore would be greatly alleviated, and in time might even disappear. But I cannot endorse the opinion that the partial and desultory planting of trees, with even all the provisos I have mentioned, and which, in most cases, would be impracticable, would exercise any appreciable influence in lessening the frequency or alleviating the condition of these sores; and, moreover, I believe that unless all the sanitary conditions I have noticed be carefully carried out in their entirety, the presence of trees, particularly in large numbers in a country like Sind, is attended with results rather the reverse of those mentioned by Lord Mark Kerr. In making this statement it must be borne in mind that Sind, unlike other tropical countries, is without a regular annual rainfall. Rain certainly is met with, but it is uncertain, partial, and generally scanty, and can never be depended upon as a means of irrigation. But Sind, like Egypt, has another and very abundant source from which it derives its chief water-supply. I mean the river Indus; and the country being for the most part perfectly flat—indeed many portions are considerably below its level—there is every facility afforded for conducting its waters by means of countless canals and water courses over large tracts of the country bordering its banks. In the month of April the river begins to rise, the canals commence to flow and remain full until September or October, when by the partial reflux to the river, aided by evaporation and absorption, the water gradually disappears. The soil from its nature and position admits of no drainage, and the result is an enormous amount of sub-surface water readily reached at from 15 to 18 feet. Here, at the outset, is presented a fatal objection to one of the conditions included in Lord Mark Kerr's suggestion, viz., "judicious draining." With regard to trees and vegetation there is of course no difficulty. A light alluvial soil, with an unlimited supply of fresh water, insures against failure in this respect. But this begets another difficulty and a serious one, the keeping within due limits the exuberant growth of the trees and vegetation which this state of things calls into existence; and when to this is added the subsequent drying up of the numerous water-courses, laden as they are with low forms of animal and vegetable life, malaria is not only developed in large quantities, but, owing to the breeze being obstructed by the trees, it clings to the luxuriant vegetation abounding on every side, and renders these refreshing and pleasant-looking retreats far more unhealthy than the dry and dusty plains. Besides the station of Jacobabad, which I have especially in view while making these remarks, there are several other towns in Upper Sind where trees and vegetation abound, and it so happens that it is notably from these places and the neighbouring districts that the Sind sore has become so well known. All these districts are notorious for malaria, and although some authorities are indisposed to trace any connection between it and the Sind sore, I have strong opinions on the subject, and believe the one to have a direct bearing on the other. Malaria seems to play an important part in predisposing the system of certain persons to take on an imperfect suppurative or ulcerative action on very slight provocation. In these persons a simple boil or an accidental abrasion frequently becomes a Sind sore in a short time. And not only so, but obstinately refusing to heal until the advent of the cold weather, or the patient is removed altogether from the malarious locality, when rapid healing occurs spontaneously.

19. I had hoped that some data might be found in the records of military and civil hospitals, which I might have quoted in support of the opinion I have advanced against the one held by Lord Mark Kerr, but I can trace neither statistics nor written opinions amongst the various records devoted to this view of the subject. However, during my late tour of inspection, I was able personally to interchange opinions with several of the medical officers, especially with those stationed at Jacobabad, where trees and vegetation exist to a greater extent than is to be found in any other part of Sind; and where also boils and ulcers are among the recognized diseases of the station, affording these officers abundant opportunities of annually extending their acquaintance with the peculiarities of this disease during its entire course. And their experience of these boils or sores, which, as a rule, are coincident with the excessive heat and moisture prevailing during the height of the periodical overflow of the canals and water-courses in their densely wooded station, is that they are in some manner connected with the numerous trees, the humid warm atmosphere, and the complete absence of drainage; all of which are to be met with in their greatest extremes at Jacobabad.

20. While malaria therefore is endemic, abundant sub-surface water present, and drainage impracticable, I think I may safely affirm that in a country like Sind, experience proves that the planting of trees, grass, &c., would neither diminish the frequency of the sores peculiar to the province, alleviate their progress, nor shorten their course; but on the contrary, I am amongst the number of those who consider they would become aggravated thereby.

21. To return from this digression, I proceed to notice the proportion in which the two classes, Hindoo and Mahomedan, have contributed to the general sickness during the year under report. The strength of the former is 732, of the latter 2,811. From the first, 977 admissions are recorded, and 20 deaths: from the last 3,743 admissions and 52 deaths. The Hindoos, therefore, show a considerable higher death-rate than do the Mahomedans. This amounts to 2·7, while that for the Mahomedans is 1·3, proving that the latter from their greater consumption of nitrogenous elements in their food, are better capable of resisting the tendency to death than are the other class, whose diet, from their larger use of cereals, contain a greater amount of starch.

22. The returns show that 24 men died out of hospital and on leave, but these are not given according to caste: 127 were invalided, 18 being Hindoos and 109 Mahomedans. This shows a percentage to strength of 2 of the former and 3·7 of the latter, which apparently rather militates against the theory advanced in the preceding paragraph, but while the Mahomedans at least during youth possess greater stamina and power than the Hindoos to resist, under sickness, the tendency to a fatal issue, it would seem that, owing to their habits being generally more dissipated, they become sooner worn out and unfit for hard work. Executive officers are well aware of the greater frequency of rheumatic complaints—complicated with syphilis, as also of premature old age, the result of debauchery—as witnessed in Mahomedans who have completed their time for pension. While on the subject of invaliding, I would desire to bring to the notice of Government a matter which, I think, requires recommendation, I mean the discharging of men pronounced unfit by the committee with a gratuity who have nearly completed their period of service qualifying for pension. Cases of this kind are constantly occurring. Last year there were not less than 9 men whose periods of service averaged from 13½ to nearly 15 years, and yet, in accordance with the rules of the service, having been pronounced unfit, they were discharged with a gratuity. In the case of men enlisted at an advanced age, or who have been continually sick, or from other causes can be got to do little or no work, this rule is a salutary one, and cannot be regarded, even by them, as harsh; but it is otherwise with those who, perhaps, have done good service for 13½ to 14 years or upwards, and then, from causes with which they are in no way responsible, suddenly break down or become incapacitated for further active service, when another year, or after only a few more months, would have tided them over the period at which they would have been qualified for pension, and during which, in many instances, they are sufficiently capable of performing light duties. I have reason to believe that sepoys hold strong opinions on this matter, and are apt to misconstrue instances of the kind I have mentioned into an intention on the part of the authorities to evade granting them their pension. A larger amount of indulgence towards them, in this respect, would not be a costly boon, and would remove many a grievance caused by the existing rule. During the year 237 recruits have been enrolled, of whom 55 were Hindoos and 202 Mahomedans.

23. I am glad that for the year under report I have no mention to make of cholera having visited the province. In the months of July and August last it prevailed to a considerable extent in the Punjab, and was gradually extending to Lahore and in the direction of Multan; and it was, therefore, not unreasonable to suppose that, eventually, it might find its way down the Indus to Hyderabad and Kurrachee in the same manner as it travelled in 1869. At the request of the Commissioner in Sind I placed myself in communication with the principal medical officer at Multan, with the view of receiving early intimation of any outbreak of epidemic cholera that might take place there. In anticipation of its appearance I instructed the medical officer in charge of Sakkar to make arrangements for instituting careful enquiries on the arrival of any steamer or boat from Multan, to ascertain whether persons suffering from cholera or suspicious cases existed on board, and that, in the event of such appearing, the sufferers be immediately landed and segregated in the hospital set apart for the purpose; that the vessels from on board which such cases were received, should be thoroughly cleaned and disinfected before being allowed to proceed on their downward journey; and that all tainted bedding and clothing should be destroyed. Intelligence reached me that a few cases of the disease had shown themselves at Multan, but that there was no tendency observed towards increasing, or to its assuming an epidemic form; and shortly afterwards it was reported to have disappeared altogether, apparently taking a north-westerly course. No case was observed in any of the vessels touching at Sakkar.

24. Neither has small-pox been anywhere seen in the division. A few cases of measles have been met with, but they are hardly worth recording; nor has any other disease—except

dengue already noticed—presented itself in an epidemic form during the past year. Scurvy gave 8 cases against 19, and 1 death occurring in 1871. Sunstroke 1 for both years. Dracunculus 7, which is 1 in excess of the previous year.

25. The chief point of interest in the history of the 27th N. I. or 1st Belooch Regiment is the invasion of dengue: 412 cases out of a strength of 668 having been admitted into hospital. In his report Assistant Surgeon Nolan mentions that, in almost every instance, he was careful to note the pulse, respirations, and temperature, daily during the attack; besides in the most severe cases frequently testing the urine for albumen but with negative results. He reports also very favourably respecting the hypodermic injection of quinine in ague. He used it in this manner constantly, the sepoys not objecting. In only one case was it followed by any sore. The quantity employed was from one half to one grain, and which seldom required to be repeated. One operation, as he says, generally effecting a cure. If further experience confirms such encouraging results, this mode of administering the drug, if it can be extended, will effect quite a revolution, both in the rapidity of cure and a great saving of a costly medicine. But in the meantime it would be rash to form any conclusions from such scanty data. Diseases of the respiratory system gave 64 admissions—the bulk of them being from bronchitis—followed by 2 casualties. 9 cases of pleurisy were met with, resulting in 2 deaths. Pneumonia furnished 3 admissions, one of them terminating fatally. 71 cases of diseases of the digestive system occurred—15 of them being dysentery followed by 1 death. Under this class of disease, 2 other casualties occurred—1 from diarrhoea, the other from hepatitis. Four European officers have been on the sick list during the year: one of them on 4 separate occasions. Another officer only a short time returned from England, was obliged to be again sent back with two years' leave on account of chronic inflammation of the brain. Vaccination has been carefully attended to; the operation was performed successfully on 43 children. There are no unprotected children except those lately born. Nothing has been accomplished in the matter of revaccination. 39 men have been invalided.

26. The 29th Regiment N.I. or 2nd Belooches shews nearly double the number of admissions last year than for the previous one, or 1,133 against 613. The mortality, however, is not in a like proportion, but remains at the same figure as in 1871, viz. 8.; and the ratio of deaths to treated and likewise to strength is, for the past year, lower than for any other regiment in the province, being respectively 0.6 and 1.2. The cause of this large increase of sickness is accounted for by the number of admissions from ague, which has been unusually prevalent at Haidarabad for the year under review; also dengue has added 175 patients to the list. In the treatment of ague Assistant Surgeon Keelan has also used the hypodermic injection of quinine, with, as he says, very good results. Out of the 8 casualties, 6 have followed diseases of the respiratory organs, 3 of them having resulted from bronchitis. Diseases of the digestive system show 60 admissions: 15 of these were from dysentery. One casualty occurred under this class from hepatitis. In other respects the diseases of this regiment are of an average nature, and call for no special remark. During the year 55 children have been vaccinated, and without any requiring the operation to be repeated. 12 cases of revaccination in adults are noted, but only 4 of them proved successful. 5 European officers have been on the sick report for periods varying from 3 to 38 days: 3 of them were from dengue. 10 men were pensioned, and 5 were discharged with gratuity.

27. Compared with the preceding year, the returns from the 30th Regiment N. I., or Jacob's Rifles, show a slight diminution in the number of admissions, the average strength, however, has been less by 50; deaths in 1871 amounted to 20; last year they were 19 but these do not include 6 casualties which occurred in two detachments which marched to Khelat: one of them in the height of the hot season. On that occasion the men numbering 86 were under the command of a European officer and in charge of an hospital assistant, and suffered severely from the sun. 3 died from heat-apoplexy, and 2, on arrival at Khelat, from dysentery. The march seems to have been a very trying one, and even after the return of the men, in the end of October, many of them still suffered from the severe exposure. The general health of the regiment is still very unsatisfactory, the ratio of admissions to strength having undergone little change during the past year; 185.1 was the percentage under this head for the previous year, and it is still as high as 182.5 for the past one. But no change for the better can be expected so long as the regiment, debilitated as it is, remains year after year exposed to the very causes which have reduced it to its present feeble condition. 534 cases of malarious fevers have been reported, out of a strength of 510, yielding 3 deaths. Diseases of the lungs have numbered 50, of which 25 were pneumonia, most of them marked by a low state of vitality, and resulting in 7 casualties. Pneumonic phthisis also carried off 3 out of 4 patients affected. In these two diseases the deaths occurred in men of broken-down constitution, with enormous spleens. Diseases of the digestive system show 86 admissions: 17 of these being dysentery, 25 diarrhoea, and 14 were returned as cases of lardaceous spleen, the consequence of malarial poisoning. Under the head of diseases of the cutaneous system—Boils and Ulcers comprise nearly the whole of the admissions, having amounted to 101 out of 114 cases belonging to this class. Assistant Surgeon Howell describes the latter as being parti-

cularly obstinate and only improving on the approach of the cold season. They were nearly all of them examples of the Sind sore. 13 children were successfully vaccinated. There only remain 5 children unprotected, but on whom the operation will be performed when old enough. No report has been made of any cases of revaccination. 9 men were invalided.

28. While the admissions in the 1st Regiment Sind Horse are one-third fewer than in the 30th N.I., the percentage of treated to strength and deaths to treated are almost identical; the figures used in the one would be equally correct if employed for noting the same particulars in the other. The numbers treated for the year show an increase of 65 over 1871; and the deathrate is especially high, 3·6 being the ratio for the past year, whereas 2·5 was that for the previous one. 405 cases of malarious fever were treated out of a strength of 354, with only 1 death. Pneumonia figures largely: 23 admissions and 9 deaths being returned from this disease alone. Dysentery gives 19 cases and 1 casualty; and splenitis shows 14 admissions—a circumstance not a little remarkable, seeing that not a single case of this disease has been observed in any of the other regiments at Jacobabad, and only 2 others are recorded as having occurred in one of the Belooch regiments. Boils and ulcers were numerous—52—and most of them characterized with the special intractableness peculiar to this disease in Upper Sind. Assistant Surgeon Banks has shewn great energy in getting many of the unprotected persons in his regiment vaccinated. He reports 115 adults and 25 children to have been successfully vaccinated. 15 men also were revaccinated, which proved successful in 6 of them; considering the extreme prejudices and almost insurmountable difficulties to be overcome among the men of these regiments to vaccination, under any circumstances Dr. Banks deserves considerable credit in having accomplished so much. 9 men were discharged with pension.

29. The 2nd Regiment Sind Horse, with a strength somewhat smaller and the admissions also fewer in proportion, shows an average daily number of sick $2\frac{1}{2}$ times as large as that of the 1st Regiment. The ratio of treated to strength is a few numerals higher, but the percentage of deaths to strength and deaths to treated is the same as for the two regiments just noticed. The admissions from malarious fevers are one-third more numerous during the year under report than for the previous one; and this disease has prevailed to a greater extent in this regiment than in any of the others at Jacobabad; 6 deaths have occurred from this cause alone, which contrasts unfavourably with the mortality arising from intermittent and remittent fevers in the remaining regiments in the province, which amounts to only 11. Surgeon Byramjee in his report draws attention to the statements he made in the previous year regarding the satisfactory results obtained from the employment of “sulphites” in the treatment of ague, and which his experience of the past year fully confirms. He has found them particularly useful in those cases of ague where the chylipoietic viscera are deranged, and where the cinchona alkaloids do not succeed so well as they do in cases free from such complications; and he likewise considers they are especially serviceable where cold has been the exciting cause, and in which the sympathetic nerves are principally affected. Diseases of the respiratory system return 25 patients, 18 of them being cases of pneumonia followed by 2 deaths; a more favourable result than was observed in the previous year, where 5 casualties followed twenty admissions from this disease. Diseases of the digestive system have prevailed to a much greater extent this year than in the former one, as has been observed in all the regiments in Upper Sind; and is easily explained by the unusual amount of rain, the heavy inundations, and the protracted period in the season, before the surface of the country was restored to its normal condition. 14 admissions from dysentery are noticed against 5 in 1871: no casualties occurred. Diseases of the cellular and cutaneous system were numerous. 40 cases of abscess were admitted, with no diminution to the usual list of boils and ulcers, which amounted to 55. In the matter of vaccination 35 out of 36 cases were successful. Dr. Byramjee mentions that even to obtain this number he was put to infinite trouble, and although he personally appealed to several of the native officers on the subject, it was with the greatest difficulty he succeeded in accomplishing what he did. The invalids amounted to 23.

30. The history of the 3rd Regiment Sind Horse does not materially differ from those of the other two regiments. The average strength was 338, the admissions 770, and the deaths 10. The average daily number of sick was 3·3, percentage of treated to strength was higher than in any other regiment, being 238·1; of deaths to strength 2·9, which again is lower than in the other regiments stationed at Jacobabad; as was also that of the deaths to treated which is 1·2. Of intermittent and remittent fevers there have been 462 cases, which is in excess of the previous year by 36. In that year there were but 2 casualties; in the past, 4 have occurred from the above causes. Pneumonia returns only 11 cases with 1 death, against 21 admissions and 3 deaths for 1871; so that in this respect there is improvement. Dysentery shows a slight increase over the previous year, 9 cases having been admitted; but this is considerably below the number noted under this disease for the other regiments in Sind. Diarrhoea, however, has been more prevalent and, with the exception of the 30th Regiment N.I., returns the largest number of cases. Congestion of the spleen has been witnessed oftener among the men of this regiment than in any other: 11 cases have been admitted for treatment; whereas only one other regiment

notices this disease at all, the 2nd Sind Horse having had four cases. Assistant Surgeon Carswell has found the application of the ointment biniodide of mercury, as recommended by Professor Maclean of Netley, serviceable in reducing the size of the organ. There have been 122 admissions from boils and ulcers, which is more than double the number noticed in either the 1st or 2nd Regiments Sind Horse. Assistant Surgeon Carswell remarks on their intractable character, and considers them the result indirectly of climate. Contusions represent 84 admissions. In mounted regiments it is natural to expect a large number of injuries of this class, and as the duties of all are nearly alike and performed at the same station, the proportion should be pretty equal. It is somewhat remarkable, therefore, that just twice the number should have been received in the 3rd Regiment than in the 2nd—the 1st Regiment taking an intermediate position. Difficulties similar to those met with in the other regiments of Sind Horse in regard to vaccination, have been experienced in this regiment also. It appears to be held in especial disfavour. Previous to the month of November last the register presented a total blank, since then an attempt has been made to establish vaccination, but with very partial success. 34 men have been invalidated.

31. It has long been a custom in the Jacobabad Brigade to dispense with the names of officers who are sick appearing on the sick report, and, consequently, although it is by no means an unfrequent occurrence for the officers to be sick, yet no official record is kept of the circumstance. The measure, therefore, in which the climate affects the European portion of the Force, is best estimated by the number of these who are annually obliged to be sent away on sick certificate. In his sanitary report for 1872, the senior medical officer makes the following observations when referring to this matter: 6 European officers were sent away this year on sick leave, 2 went on private leave, of whom 1 could have obtained a medical certificate, and 3 more also were eligible for sick leave. Dr. Byramjee takes up other points in his report in connection with the health of the troops as affected by the climate of Jacobabad, to which I would direct attention.

32. While taking the inspections of the regiments at Jacobabad, I made enquires regarding the frequency of leeches being used, and the average number that were applied at one time when local blood letting was considered necessary. I was led to do this as from the general low state of vitality and anæmic condition of the troops at the station, I questioned very much the propriety of resorting to even this mode of depletion, except in extreme and very exceptional cases. Although I anticipated replies to my queries favouring the views I held on this matter, I confess to have been hardly prepared for the information I received. And that there might exist no misapprehension on the point, I directed the medical officers to furnish me with a return from each regiment stating, (a) the monthly pay of the leechman; (b) the number of times leeches had been applied during 1872; (c) the total number of dozens during the year. The returns from each are:—

<i>1st Regiment Sind Horse.</i>					<i>3rd Regiment Sind Horse.</i>				
(a).	...	...	...	Rs. 10	(a).	...	...	...	Rs. 10
(b).	...	...	...	3 times.	(b).	...	...	...	None.
(c).	...	...	...	5 dozens.	(c).	...	...	...	None.
<i>2nd Regiment Sind Horse.</i>					<i>30th Regiment N. I.</i>				
(a).	...	...	...	Rs. 10	(a).	...	...	...	Rs. 10
(b).	...	...	...	None.	(b).	...	...	...	None.
(c).	...	...	...	None.	(c).	...	...	...	None.

A total, therefore, of 5 dozen leeches were used in the 4 regiments at Jacobabad during the past year; and as the monthly pay of 4 leechmen amounts to Rs. 40, and in a year to Rs. 480, this latter sum represents the cost to Government of 5 dozen leeches, the number used in one year for the troops in upper Sind. I hope it is only necessary to bring to notice this monstrous waste of public funds, to insure a summary stop being put to the present system. On a frontier station the regiments must of course be always equipped for field service; but a leechman to each, while in camp, is not only the least important part of such equipment, but altogether a very questionable appendage. To secure efficiency and at the same time to save a needless waste of money, the leechman should at once be dismissed, and leeches when required, which will very seldom be the case, procured from the bazar, and the cost recovered by contingent bill, as is the practice at the dispensary there, and on any regiment being called away on service, a leechman could be temporarily attached to it by the Commissariat Department. If this plan can be adopted in the matter of the leechman, it is equally imperative to do so in connection with the washermen. Each regiment maintains a washerman on a monthly pay of Rs. 8. His duties are almost nominal, consisting of washing merely the tapes of the

cots and the few articles of hospital clothing. These could be washed in the bazar at a very small cost. A washerman also is totally unnecessary with a regiment on field service, as it carries no cots with it, and the clothing it takes is extremely limited, and confined nearly exclusively to woollen or quilted materials which are seldom washed.

33. I will take this opportunity of pointing out where, in another direction, also a most important saving to Government might be effected without sacrificing efficiency in the smallest degree. In all the military hospitals I have found a large and varied assortment of surgical instruments and appliances. The operations annually performed in the regiments are, as a rule, insignificant, and, except in very rare instances, a pocket case, or at most the Capital instrument case, which they all have, supply nearly every thing that is required. Where then is the necessity of each regiment, and, especially, where several are at the same station, possessing separate sets of instruments, such as amputating, cupping, midwifery, dissecting, *post mortem*, teeth, besides urinometers, stomach pumps, electro-magnetic machines, speculums auri and vaginæ, pullies for reducing dislocations, trocars, elastic syringes, *cum multum aliis*? They are seldom or never used, cost a considerable sum at the outset, and are continually getting out of order and requiring to be returned into store for repairs. At Jacobabad there is a civil hospital under the charge of the senior medical officer, and at Haidarabad and Kurrachee general hospitals. In these might be placed a complete set of the instruments I have named, to be issued on loan to any medical officer requiring them, and a few extra ones might be retained at Jacobabad for the use of any of the regiments ordered to take the field; although with a couple of pocket instrument cases supplemented by the usual large capital instrument one, a medical officer ought to be prepared for almost any emergency that might occur. I am convinced that by adopting a procedure such as I have here indicated, a considerable annual saving might be effected in the military hospitals in Sind, and without impairing in the least their present efficiency.

34. The lock hospital at Kurrachee is in the same building as last year; and the accommodation and general arrangements are in no way altered from those described in the previous report. The results have been more satisfactory during the past year than in 1871. The venereal returns from the whole Brigade have been 92, equal to a percentage of 0·5, which is a considerable improvement over the former year when they were 0·9 per cent. A steady advance has been making in the numbers of women registered and admitted for treatment, 190 remained on the register at the end of 1871; 41 have been added during the past year; 27 have removed their names, and 204 were still on the register on 31st December last. The average monthly number of prostitutes attending the periodical examinations was 200 against 97 during 1871; of those reported for non-attendance 70, being 30 in excess of that for the previous year, while the number found diseased at the periodical examination was 16 against 10 during the former year. Total admissions amount to 197, whereas 124 was the number for 1871: of these 191 have been discharged. The number of days under treatment has varied, but excepting 8 women whose cases were tedious, the period has averaged 9 days. The police are reported to have given more assistance than formerly in bringing women up to be registered; and the sanction which has been accorded for entertaining two additional dhais has likewise been productive of benefit in this direction. During the past year, power has been granted to the medical officer in charge to punish breaches of paragraphs 14, 16, and 19 of Act XIV of 1868. He suggests that paragraphs 6, 9, 10, 21, 22, and 23 be added, as the medical officer would have the entire charge of the registered women. But these would lead to many other of the rules requiring to be included, which would confer upon the medical officer judicial functions not contemplated by this Act.

35. The barrack accommodation for the troops in Sind is unchanged since last year. The 27th N.I., or 1st Belooch Regiment, finds their new quarters in the old dépôt barracks most convenient and suitable; they have abundance of room. All fears regarding typhoid fever or zymotic disease showing itself among the men, owing to the bad repute these barracks enjoyed in former years, are entirely at an end. The thorough sanitary measures which were adopted previous to their being made over to the Belooch regiment have proved quite successful—not a single case of sickness has occurred in the regiment which could even indirectly be traced to them. The accommodation in hospital under ordinary circumstances is sufficient; but during the late prevalence of dengue a number of tents required to be put into requisition. Nothing, however, has been done to supply the great want of quarters for 2nd class servants, which are far too limited for the establishment.

36. The quarters for the native commissioned officers in the 29th N.I. or 2nd Belooch Regiment were reported last year as much too small for comfort or respectability: they are also close and unhealthy owing to the absence of ventilators. No improvement has been effected in these: otherwise the lines are good, well ventilated, and the accommodation sufficient. The hospital, although large enough and in most respects suitable and convenient, has two great defects, but which cannot be remedied. One is being too close to the lines from which the ground slightly slopes towards it; the other is the want of a plinth, and the flooring being of mud only.

37. The lines of the 30th Regiment N.I. are on the whole good. They would be greatly improved by having an open verandah built along the front of the pendalls to keep the sun off the sepoys' rooms; and, also, they should be prevented building up their doorways, which they do on account of the cold, until they leave merely sufficient space to creep in and out. The hospital is a good one and the accommodation sufficient; but no remedy has been provided for the objection I took the year before last, to the numerous blocks of houses for commissariat followers who crowd round the hospital. There being no fireplace as in the other hospitals at Jacobabad, a stove is being made for heating this one.

38. In last year's report the accommodation for the men of the 1st Regiment Sind Horse was described as very unsatisfactory. The space is far too limited, each room represents a cube of 8 feet; the floor is not raised; there are no ventilators, neither any outside verandah. I was told, however, that sanction had been obtained for new ones being erected. The hospital accommodation would be much too limited for a line regiment; but owing to the system obtaining in these mounted regiments, mentioned elsewhere, of allowing the moderately sick to be treated as out-patients, the inconvenience is not felt. The fireplace, an absolute necessity in the winter months at this station, which I recommended to be built at my former inspection, has not yet been made. The repair of the hospital is good, but it has the same objection as the others have, viz., the houses of camp followers abutting on it.

39. The huts, or rather hovels, of the men of the 2nd Regiment Sind Horse were in even a worse condition, if possible, than when I inspected them in 1871. They are totally unfit to live in, and that this regiment does not present a much higher deathrate, is only an instance of that peculiar compensating power of nature which accommodates the human system to exist under the most adverse circumstances. They have been, however, formally condemned and sanction obtained for new ones being built. Hospital accommodation is sufficient on the principle stated when speaking of that for the 1st Regiment. No remedy, I fear, can be applied to remove the great objection complained of in respect to its site, the lines being immediately in front, the married men's quarters close behind. The former are kept as clean as circumstances will admit of; the latter are considered sacred, and their sanitary condition, therefore, can be more easily imagined than described.

40. With respect to the lines of the 3rd Regiment described in my previous report, I have nothing to add. They are as nearly perfect as buildings of this description can be, and it is to be hoped that the new ones about to be constructed will be built on the same model. The description given of the hospital of the 2nd Regiment will apply equally well to this one, as they are both under one roof—a partition wall merely separates the one hospital from the other.

41. In speaking of the water-supply for Kurrachee, the staff surgeon in his sanitary report for the station says it "is ample, and may be called good from the commissariat wells," even from the first part of this opinion I must differ, and from the last dissent *in toto*. As in the following remarks I am confining them entirely to the water used by the native regiment, I must particularize the well from which it procures its supply. This is situated about a quarter of a mile distant from the lines, and is termed a commissariat well, but it is not the one from which the 66th Regiment receives its water. It lies some 250 yards off from the lines of the commissariat followers, and is sufficiently abundant even in the hot season. But from its situation near the lines of the followers, in which there is a latrine, and the ground sloping towards the well, there exists more than a suspicion of sewage contamination. In the report of the Sanitary Commissioner for 1869, the Chemical Analyser to Government gives a detailed account of the analysis of the other commissariat well which supplies the 66th Regiment. He pronounces it bad in consequence of mineral impurities and suspicion of sewage contamination. As he has likewise reported on the well which supplies the artillery and describes it also as bad, both as regards quantity and quality of mineral impurities, it is not unreasonable to conclude that this other well—the one frequented by the native regiment and which lies nearly in a line between the two—will, likewise, contain more or less of the same impurities, in addition to the certainty of its being contaminated with sewage. That the want of good water for Kurrachee has been a long acknowledged fact, is sufficiently shown by the numerous schemes—amounting to ten—which since the year 1845 have been projected in order to obtain it; but, after more or less discussion and hopes held out of seeing one or other of the number carried into effect, all have been laid aside, chiefly on the score of expense. During the visit of the Viceroy to Kurrachee in November last, the municipality brought to his Excellency's notice this pressing necessity of supplying the town and camp with good water, and trusted Government would be induced to help them in carrying to completion some well-digested scheme for supplying this *desideratum*. Lord Northbrook's reply was sufficiently encouraging to afford reasonable hopes that ere long this reproach to Kurrachee will be removed.

42. An evil of a similar nature to the one just recorded exists at Haidarabad. The 29th N.I. or 2nd Belooch Regiment is entirely dependent for its water supply on 3 wells, situated near the bank of a nullah, which, on the subsidence of the Indus, contains stagnant water, loaded with low forms of animal and vegetable life. Contamination of the adjoining wells is,

therefore, a necessary consequence, and, although these are likewise fed by the sub-surface water stored up from the annual inundation of the river which covers a considerable surface of the low-lying ground in the neighbourhood, yet, by the beginning of the hot season, this supply is nearly exhausted; and last year previous to the rising of the Indus, the water in these wells was not only extremely deficient, but so charged with mud and other impurities as to be scarcely fit for use. As at Kurrachee various plans for obtaining a pure and plentiful supply of water have been at different times put forward; and when it is remembered that the Indus is within 4 miles, and a branch, the Foolaile, not half that distance, it is a marvel that hitherto nothing has been done to supply this great want—one that not only presses heavily on the troops in the station, but likewise on the inhabitants of this the second largest town in Sind.

43. At Jacobabad, on the other hand, the difficulty exists not in obtaining water but in getting rid of it, as I mentioned in my former report, owing to the station being many feet below the level of the Indus, and the network of canals and water-courses which intersect the station and adjoining district, sub-surface water of excellent quality and to an unlimited extent is readily met with, at a depth of from 15 to 18 feet.

44. The drainage at the stations occupied by the troops in Sind having been noticed in the previous year's report may be disposed of in a few words. In ordinary years, owing to the small amount of rain, inconvenience from insufficient drainage is not complained of. But, in consequence of the unusually heavy fall which occurred last year, a considerable amount of water accumulated in certain parts within and around cantonments, where the surface of the ground was too level to admit of its draining away. In Kurrachee the fall was for the most part sudden and violent, amounting altogether to 8·20 inches. A good portion of this ran off, thoroughly cleaning the surface and scouring out the bazar and town: local malaria exists to a slight extent to the north of the camp, where a good deal of cultivation is carried on; but from its position and the prevailing winds, it can hardly be reckoned as an element in producing sickness in the station. Between the cantonment and the sea, there is to be seen always at low water, and especially at springtides, many acres of muddy marsh, partially covered with the mangrove bush. For eight months of the year the sea-breeze blows over this to camp; but, owing to its being submerged by the sea once in every 12 hours, it exercises no unhealthy influence on the health of the troops. The temperature for the past year has been moderate. At Kurrachee the maximum of the thermometer in the air as noticed at the Observatory was 107·0. This was in the month of September. The minimum which occurred in the month of January was 54°.

45. At Haidarabad the drainage is greatly favoured by nature. The cantonment stands on a raised plateau of sandstone and limerock with a top-dressing of sand. From this the water easily finds its way to the surrounding plain. But last year 8·63 inches of rain—6·18 of which fell in the month of July—were not so readily disposed of. The camp was almost one sheet of water which took some days to entirely disappear. In my report for 1871 I referred to the sources of local malaria which is annually generated in the adjacent plain just below the cantonment, by the overflowing of the Indus. Last year the extent of this marsh was largely increased by the unusual amount of rain; and to this no doubt is to be attributed the greater proportion of fever cases which prevailed in the autumn months. It is intended to fill up by degrees one or more of the shallow tanks which form a portion of this marsh, and which no doubt would be attended with benefit; but, at the slow rate this is being proceeded with, it will take years to accomplish; moreover, this would go but a small way in removing this prolific source of malaria which annually affects the health of the station. The most effectual and, indeed, only way of dealing with the evil, is to bund out the river, and, also, by means of sluice-gates, to control the flow of water through canals and cuttings, communicating with the marshy land. The range in the thermometer has been less than usual for the past year: 102° was the maximum in the air at 3 P.M., 5° lower than at Kurrachee, and the lowest was 56° at sunrise. But this does not correctly show the minimum; for in the early part of February the cold was very great on several successive mornings. The trees were blighted by the frost, and ice was found once in the vicinity of the jail.

46. From what I have mentioned in the earlier part of this report, when alluding to the inundations at Jacobabad and more especially to the description of the station given in my previous report for 1871, it will be seen that drainage has no existence. Evaporation and absorption are the only means known at Jacobabad for getting rid of rain and the Indus water on the subsidence of the annual inundations. I have been favored with some careful meteorological observations made at Jacobabad for the year 1872, from which I extract the following. The two hottest months were May and June, the mean maximum of the thermometer in the shade being respectively 112° and 119°. The highest reading for the whole year was at 3 P.M. on 6th June, when 124° was registered in the shade. The lowest reading was on the 1st February before sunrise and this gave 31·0. The month of January showed the lowest mean minimum 42·0. The mean variation between the wet and dry bulbs taken at 9 A.M. is instruc-

tive; 17° is the highest, which was for the month of May; 3° the lowest noted in September. In the previous month it was slightly higher, 4°. It is during these two months that the atmosphere is loaded nearly to saturation; and it was in these months observed also that no breeze was perceptible. The general direction of the wind was from January to 15th April N.N.W. and N.E. From April to end of July, E. and S. E., while in October, November, and December, the prevailing winds were from the E. and N.E. As the above observations are from a reliable source, I am glad to be able to record them, as they quite remove the misconceptions which were found in the previous year in respect to the relative temperature of Jacobabad and Haidarabad, and which it is now evident were based on erroneous data.

47. The system of conservancy known under the name of Trench-latrines, which was sought to be introduced in the Belooch regiment at Kurrachee in 1871, and which was emphatically condemned for the reasons stated in my report for that year, was ordered to be carried into practice in the month of April last. Shortly afterwards the nuisance became so intolerable that a committee, of which I was president, was appointed by the officer commanding the district to report on the subject. We had the ground dug up in several places around the latrines and found that its uniform condition was a mixture of rounded stones—in size varying from that of a nutmeg to a small orange—and a slight sandy soil, containing very little alluvial matter. The proportion of these in every four parts, was estimated at—stones 1, alluvial deposit 1, sand 2; and it was, therefore, a simple impossibility to expect a deodorizing action to follow the burying human excrement in such a mixture. The stench was very great and extended to a considerable distance on all sides; and we gave it as our opinion that, if it was determined to persevere with the system, it would be necessary to discontinue filling up the trenches with the soil and other matters dug from them, and employ exclusively alluvial soil brought from a distance; otherwise the nuisance would not merely increase, but eventually prove a fruitful source of danger to the community. The system was abandoned and the men reverted to the use of the regimental latrines, which are built of pukka brick and fitted with iron pans. These are kept clean. At Haidarabad also it was, at one time, in contemplation to introduce the trench-latrines in the 29th Regiment N.I. It was not, however, put into execution, the nature of the ground there presenting even still greater difficulties than at Kurrachee, it being entirely composed of stones and sand. The conservancy on the old plan is efficiently carried out in the regiment, and the nightsoil is removed in filth-carts between sunset and sunrise to a nullah nearly 3 miles distant from the lines. In the hospital the Dry-earth system is in force; and to insure its thoroughness, I directed, as in the other Belooch hospital, also separate receptacles to be used, so as to avoid mixture of the solids and fluids. In the regimental hospitals at Jacobabad the same system has been introduced—in the 30th N.I. with good results—but in the regiments of Sind Horse with only partial success.

48. In consequence, as I understand, of my having last year brought to the notice of the Commissioner in Sind the very unsatisfactory sanitary condition of the station of Jacobabad, orders were issued to cut down a number of the trees and also to thin the others as far as practicable. On visiting the station in December last, I noticed that some progress had been made in diminishing their number; but, seeing they have been permitted to multiply to such an enormous extent for several years past, the ones that have thus been removed do not appear to have produced any appreciable diminution in the vast number still remaining. Those lining the sides of the roads require judicious thinning only; but of the rest one-half might be removed altogether with great advantage. Whether this is done or not, there should certainly go forth an order that all trees, according to their size, should have their lower branches freely lopped, so as to oppose no obstacle to the breeze sweeping over the ground from one end of camp to the other. In connection with this matter much requires to be done in removing all undergrowth and neglected vegetation, which I observed in far too great abundance throughout camp. These not only intercept the breeze but accumulate rubbish and debris at their roots, in turn add their quota to the already too numerous agents at work in propagating disease. One plant I noticed in particular, which greatly preponderated. This is the "Yock" (*kalotropis gigantea*), a plant, I believe, held in considerable estimation by the natives, but which should not on that account be allowed to grow at pleasure all over the cantonment to the prejudice of the residents. The numerous nullahs and water-courses which, on the laying out of the cantonment were deemed requisite to carry nourishment to the young trees, are now no longer necessary. The trees have grown up and do not stand in need of such constant watering; and to keep open these nullahs, therefore, and to allow them to be yearly filled by the Indus, is to keep up, to a large extent, one of the chief sources of mischief to be found at Jacobabad—I mean the evil of hypersaturation of the atmosphere, and encouraging and actually providing countless receptacles for the generation of a poison which already exists in too great abundance and—do what we will—must ever remain one of the scourges of the place. Were one-fourth or even one-third of these water-courses filled up, the evil I have depicted would undoubtedly be considerably diminished, and that without calling into existence a single inconvenience worth a moment's consideration.

49. There is a point in connection with the conservancy of Jacobabad to which I made especial reference in my report for 1871, and which, I think, ought to be insisted upon, as I believe it plays no insignificant part in the general causes which, by common consent, confer such an unenviable notoriety for unhealthiness upon this frontier station. The roads in and around Jacobabad are computed at 15 miles; and I allude to the practice of annually covering these more or less with quantities of the elephant grass (*typha elephantina*), where it lies to rot until replaced the following year with fresh. But during all this time it receives into it the dung of cattle and other organic refuse, which in wet weather becomes of course most offensive, and in which state it must necessarily prove a source of unhealthiness to the community, and especially in the sadar bazar, against which it would not be difficult to bring various charges of neglect of the most common rules of sanitation; it would be very desirable to exclude this additional element in the production of disease. The obvious remedy for this evil is, in the absence of stone, to make the roads of pounded bricks and lime; and there being materials at hand in the numerous old ruins, walls, and deserted lines, no great expense would be necessary to make a fair commencement; and every year would witness a gradual extension. If the above suggestions for the sanitary improvement of Jacobabad were completely carried out, some of the causes of local disease would be, if not removed, at least greatly diminished, and the healthiness of the station increased in corresponding degree. But I would not be misunderstood or have it supposed that, even under these altered circumstances, Jacobabad would not always rank as the most unhealthy station for troops in the whole Bombay Presidency.

50. With the statistics of the past year before me, and especially taking into consideration the continued unsatisfactory condition of the 30th Regiment N.I., I can only repeat what I said in my report for 1871, regarding the desirableness of removing the whole of the Upper Sind Brigade for a period of not less than 3 years to a more healthy climate.

APPENDIX A.

Statement showing the Sickness and Mortality among the Native Troops serving in the Bombay Presidency during the year 1871.

Regiments,	Station.	Movement in the year.	Average strength for the year.	Number of admissions for the year.	Number of deaths in hospital.	Average daily sick per cent. to average strength.	Ratio per cent. of admission to average strength.	Ratio of deaths per cent.		Invalided.		Hindoos.		Mussalmans.		Strength of regiments on the 31st De- cember 1872.	Regiments.	Number of deaths out of hospital and death on leave.	Average number of consecutive nights in bed.
								To treated.	To average strength.	For discharge the strength.	For change of climate.	Strength.	Died per cent. to strength in and out of hospital and on leave.	Strength.	Died per cent. to strength in and out of hospital and on leave.				
27th Regiment N.I.	Kurrachee	... From Haidarabad to Kurrachee.	673	460	3	2.0	68.3	0.6	0.4	14	18	129	...	568	0.5	697	27th Regiment N.I.	3	9½
29th	"	... Haidarabad ... From Kurrachee to Haidarabad.	644	613	8	3.1	95.2	1.2	1.2	7	13	93	...	586	1.5	682	"	2	8½
30th	"	... Jacobabad ... None ...	563	1,042	20	6.9	185.1	1.7	3.5	21	21	341	0.2	358	0.5	598	"	6	3
1st Regiment Sind Horse.	"	... " ... 3 Weeks in Kutch.	359	578	9	4.1	161.0	1.5	2.5	18	14	29	10.3	464	2.1	493	1st Sind Horse	4	4
2nd	"	... " ... 27 days in the Dis- trict.	353	503	12	8.3	142.7	2.1	3.4	13	4	79	2.5	414	3.3	493	2nd "	4	5
3rd	"	... " ...	495	783	5	6.1	158.2	0.6	1.0	26	11	44	...	450	1.0	494	3rd "	...	4
		Total...	3,087	3,979	57	5.2	128.8	1.4	1.8	99	81	715	...	2,840	...	3,457		19	33

APPENDIX B.

ANNUAL RETURN of Native Troops in the Sind Division for the year ending
31st December 1872.

Regiments, &c.		27th Regiment N. I., Kurrachee.		29th Regiment N. I., Haiderabad.		30th Regiment N. I., Jacobabad.		1st Regiment S. Horse Jacobabad.		2nd Regiment S. Horse Jacobabad.		3rd Regiment S. Horse Jacobabad.		General Hospital Kurrachee.		General Hospital Haiderabad.		Grand Total.		
Strength.		668		652		510		354		322		338		955		1,014		4,813		
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	
General Diseases.	3 Chickenpox	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	4 Measles	3	...	...	...	...	...	1	...	...	...	...	...	10	...	2	...	16	...
	6 Dengue	412	...	175	...	...	...	...	...	...	...	...	...	45	...	103	...	735	...
	11 Simple continued fever	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	...
	12 Fabricula	1	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	4	...
	15 Ague	195	1	609	1	521	...	401	1	347	5	460	2	38	...	475	...	3,046	10	
	16 Remittent Fever ...	1	1	...	...	13	3	4	...	1	1	2	2	2	1	5	1	28	9
	21 Mumps .....	...	...	3	...	10	...	4	...	...	...	2	...	...	...	2	...	21	...
	34 Acute Rheumatism.	...	...	10	...	7	...	3	...	...	...	1	...	7	...	1	...	29	...
	38 Chronic	3	...	4	...	15	...	8	1	14	...	6	...	1	...	18	...	69	1	
	39 Gout .....	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	43 Syphilis primary ...	...	...	16	...	...	...	4	...	8	...	2	...	...	...	34	...	64	...
	„ Hard chancre.	6	...	...	...	4	...	...	...	...	...	...	2	...	...	...	...	12	...
	„ Soft „	4	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	5	...
	„ Suppurating bubo .....	...	...	...	...	...	...	...	...	1	1	...	...	1	...	...	...	2	1
	„ Phagedonic sore ..	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
	„ Sloughing sore.	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	3	...
	B Secondary	27	...	13	...	2	...	...	...	...	...	2	...	...	...	25	...	69	...
	49 Scrofula .....	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...
52 Diabetis	3	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	5	...	
54 Scurvy .....	...	...	...	...	...	...	2	...	4	...	2	...	...	...	1	...	9	...	
55 Anæmia	3	2	...	...	...	...	...	...	...	...	1	...	2	1	...	...	6	3	
37 Lumbago	1	...	...	...	5	...	3	...	1	...	...	...	...	...	3	...	13	...	
37 Stifneck .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	
45i Tumour febro fatty	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
47H Atheramatoris tumour	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
Diseases of the Nervous System.	61 Inflammation .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1
	65 Apoplexy .....	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1
	66 Sunstroke .....	...	...	...	...	1	...	...	...	...	...	...	1	1	...	...	...	2	1
	84 Paralysis	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	5	...
	86 Paraplegia .....	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
	101 Neuralgia .....	...	...	...	...	1	...	...	...	...	...	1	...	...	...	2	...	4	...
	101 (c) Sciatica .....	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...
	107 Dementia .....	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...
	111 Conjunctivitis ...	28	...	31	...	25	...	8	...	10	...	8	...	4	...	12	...	126	...	
	129 Opacity of cornea.	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	136 Iritis .....	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	2	...
	118 Ophthal chr. ....	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...
	122 Fatty tumour ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	128 Ulcer cornea .....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	158 Total disorganisa- tion of eye	1	...	1	...
	170 Hardeolum .....	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...
	188 Abscess behind left ear	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	190 Inflammation ...	...	...	...	...	10	...	...	...	1	...	...	...	...	...	...	...	11	...
	192 Accumulation of wax .....	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
196 Inflammation of the ear .....	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	
213 Epistaxis .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	

APPENDIX B—continued.

ANNUAL RETURN of Native Troops in the Sind Division for the year ending
31st December 1872.

Regiment, &c.		27th Regiment N. I., Kurrachee.		29th Regiment N. I., Haidarabad.		30th Regiment N. I., Jacobabad.		1st Regiment S. Horse, Jacobabad.		2nd Regiment S. Horse, Jacobabad.		3rd Regiment S. Horse, Jacobabad.		General Hospital, Kurrachee.		General Hospital, Haidarabad.		Grand Total.	
Strength.		668		652		510		354		322		338		955		1,014		4,813	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Diseases of the Circulatory System.	219 Pericarditis	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	330 (a) Dilatation of left side .....	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	1	1
	260 Phlebitis .....	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	1	1
	266 Varicose veins ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Absorbent system.	269 Inflammation of lymphatic .....	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Diseases of the Respiratory System.	306 Bronchitis	51	2	25	3	19	...	4	...	5	...	2	...	2	...	36	2	144	7
	314 Asthma .....	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	2	1
	315 Pneumonia	3	1	1	1	25	7	23	9	18	2	11	1	3	...	4	...	88	21
	322 Emphysema .....	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	325 Pneumonic phthisis .....	...	...	1	1	4	3	...	...	...	...	...	...	2	1	...	...	7	5
	331 Pleurisy	9	2	2	...	1	...	...	2	...	...	...	...	...	...	8	...	22	2
	49 Phthisis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	305 Bronchial catarrh. ....	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	1
	318 Passive congestion of lungs .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
	348 Stomatitis .....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
Diseases of the Digestive System.	340 (21) Mumps .....	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
	377 Gum boil	3	...	...	...	1	...	2	...	...	...	1	...	1	...	...	...	8	...
	366 Caries .....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	381 Ulceration	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
	420 Relaxed sore throat .....	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	5	...
	421 Ulcerated sore throat .....	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
	422 Quinsy	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...
	419 Sore throat	1	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	4	...
	423 Tonsillitis	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
	438 Salivation .....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	460 Dyspepsia	4	...	...	...	1	...	...	...	...	...	...	...	5	...	2	...	12	...
	466 Dysentery	15	1	15	...	17	2	19	1	14	...	9	...	3	2	42	...	134	6
	480 Hernia	1	...	...	...	...	...	...	...	...	...	4	...	1	...	1	...	7	...
	484 Diarrhoea	13	1	19	...	25	...	2	...	2	...	17	1	4	...	27	...	109	2
	486 Colic	20	...	20	...	12	...	5	...	1	...	...	...	...	...	42	...	100	...
	487 Constipation .....	...	...	...	...	...	...	...	...	...	...	...	...	2	...	27	...	29	...
	488 Ulceration of arms .....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	490 Fistula in ano ...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	3	...
	491 Hemorrhoids	1	...	4	...	...	...	...	...	...	...	...	...	...	...	15	...	20	...
	501 Hepatitis	1	1	1	1	...	...	...	...	...	...	...	...	...	...	4	...	6	2
	504 Simple enlargement	2	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	6	...
	506 Cirrhosis .....	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1
	513 Jaundice	1	...	...	...	7	...	6	...	1	...	1	...	...	...	...	...	16	...
	526 Congestion .....	...	...	...	...	...	...	...	...	4	...	11	...	1	...	...	...	16	...
	524 Splenitis	2	...	...	...	...	...	14	...	...	...	...	...	...	...	16	...	32	...
	529 Lardaceous spleen. ....	...	...	...	...	14	...	...	...	...	...	...	...	...	...	...	...	14	...
	532 Ascites .....	...	...	...	...	1	1	...	...	...	...	1	...	...	...	...	...	2	1

APPENDIX B—continued.

ANNUAL RETURN of Native Troops in the Sind Division for the year ending
31st December 1872.

Regiments, &c.		27th Regiment N.I., Kurrachee.		29th Regiment N.I., Haidarabad.		30th Regiment N.I., Jacobabad.		1st Regiment S. Horse, Jacobabad.		2nd Regiment S. Horse, Jacobabad.		3rd Regiment S. Horse, Jacobabad.		General Hospital, Kurrachee.		General Hospital, Haidarabad.		Grand Total.	
Strength.		668		652		510		354		322		338		955		1,014		4,813	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Diseases of the Urinary System.	538 Bright's disease...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	539 Suppurative nephritis .....	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	1
	538 Acute nephritis ..	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	...
	551 Calculi in ureter...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	577 Retention of urine	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	540 Renal abscess ...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
Diseases of the Urinary Organs.	585 Gonorrhœa	8	...	18	...	4	...	2	...	8	...	7	...	...	...	39	...	86	...
	587 Phimosis	2	...	...	...	2	...	...	...	...	...	...	...	...	...	4	...	8	...
	589 Bubo	1	...	3	...	2	...	...	...	...	...	1	...	...	...	4	...	11	...
	590 Stricture .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...
Diseases of the Genitive System.	617 Hydrocele of tunica vaginalis...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	620 Orchitis	5	...	3	...	2	...	1	...	1	...	2	...	1	...	...	...	15	...
	657 Abrasion	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Diseases of the Organs of Locomotion.	755 Ostitis .....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	768 Acute synovites...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...
	769 Chronic „ .....	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	811 Tartecollis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	704 Labour .....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	767 Malformation of left humerus ...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Diseases of the Cellular Tissue.	819 Abscess	10	...	15	...	23	...	3	...	40	...	1	...	...	...	2	...	94	...
	825 Parasitic disease ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	794 Abscess .....	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...
	825 Dracunculus .....	...	...	...	...	4	...	2	...	...	...	...	...	...	...	...	...	6	...
Diseases of the Cutaneous System.	830 Urticaria .....	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	3	...
	838 Psoriasis .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	841 Herpes	1	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	4	...
	843 Eczema	9	...	...	...	...	...	4	...	...	...	4	...	...	...	...	...	17	...
	859 Ulcer	8	...	39	...	42	...	22	...	48	...	63	...	1	...	110	...	333	...
	861 Boil	16	...	26	...	59	...	30	...	7	...	59	...	...	...	12	...	209	...
	862 Carbuncle	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	865 Whitlow	1	...	...	...	3	...	11	...	4	...	...	...	...	...	1	...	20	...
	869 Elephantiasis .....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	846 Ecthyma .....	...	...	...	...	...	...	...	...	...	...	11	...	...	...	...	...	11	...
	848 Lycosis .....	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...
	894 Scabies .....	...	...	7	...	1	...	1	...	1	...	2	...	...	...	...	...	12	...
	844 Impetigo	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...
Condition not necessarily conceded with General or Local Diseases.	905 Debility .....	...	...	...	...	8	...	1	...	14	1	6	3	2	1	1	...	32	6
	Observation	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...
	985 Scorpion bite .....	...	...	...	...	3	...	...	...	...	...	...	...	...	...	13	...	16	...
Poison.	938 Alcohol .....	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	5	...

APPENDIX B—continued.

ANNUAL RETURN of Native Troops in the Sind Division for the year ending
31st December 1872.

Regiment, &c.		27th Regiment N. I., Kurrachee.		29th Regiment N. I., Haidarabad.		30th Regiment N. I., Jacobabad.		1st Regiment S. Horse, Jacobabad.		2nd Regiment S. Horse, Jacobabad.		3rd Regiment S. Horse, Jacobabad.		General Hospital, Kurrachee.		General Hospital, Haidarabad.		Grand Total.	
Strength.		668		652		510		354		322		388		955		1,014		4,813	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Injuries.	992 Burns and scalds	2	...	4	...	3	...	1	...	3	...	4	...	1	...	2	...	20	...
	996 Privation	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	1000 Contusion	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	5	...
	1003 Concussion	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	1
	1004 (B) Fracture with depression...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	1030 Wound of cornea	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...
	1050 Fracture of rib...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1
	1059 Contusion	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	1062 Fracture and dislocation of spine	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	1066 Contusion rupture of spleen...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1
	1012 Wound face	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	3	...
	1092 Contusion	8	...	32	...	...	...	16	...	10	...	27	...	...	...	1	...	94	...
	1093 Sprain	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	1094 Incised wound...	...	...	...	...	1	...	...	...	3	1	...	...	...	...	...	...	4	1
	1101 Fracture of the clavicle	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...
	1102 Fracture of scapula	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	1103 Fracture of humerus	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	...
	1104 Fracture of fore arm	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...
	1105 Fracture of metacarpus	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...
	1110 Dislocation of shoulder	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	1111 Fracture of elbow	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...
	1113 Dislocation of thumb	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...
	1115 Contusion	59	...	...	...	44	...	42	...	33	...	57	...	5	...	30	...	270	...
	1116 Sprain	10	...	1	...	4	...	1	...	...	...	...	...	...	...	2	...	18	...
	1117 Wound incised...	2	...	37	...	7	...	1	...	...	...	...	...	2	...	4	...	53	...
	1127 Fracture of left both bones...	...	...	...	...	...	...	...	...	3	1	1	...	1	...	...	...	5	1
	1128 Fracture of tibia compound	...	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...	3	...
	1137 Fracture of the ankle	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	Excoriat. penis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Total.....		1,001	12	1,157	8	968	19	662	13	619	12	807	10	*191	†11	1,149	5	6,554	90

* Europeans 46. Natives 145.

† Europeans 4. Natives 7.

APPENDIX C.

SUMMARY of the Annual Return of Sick of Native Troops for the year 1872.

	General Diseases.		Diseases of the Nervous System.	Diseases of the Eye, &c.	Diseases of the Circulatory System.	Diseases of the Absorbent System.	Diseases of the Respiratory System.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Urinary Organs.	Diseases of the General System.	Diseases of the Breast.	Diseases of the Organs of Locomotion.	Diseases of the Cellular Tissue.	Diseases of the Cutaneous System.	Conditions not necessarily connected with General or Local diseases.	Poisons.	Injuries.	Punishments.	Grand Total.
	A	B																		
Treated during the year 1872	3,854	292	18	157	5	2	268	539	69	18	45	...	8	101	617	38	21	502	...	6,554
Died during the year 1872...	19	5	3	...	2	...	38	11	1	...	...	...	...	...	...	6	...	5	...	90

a-2
b-1
c-2
d-1
e-4
f-2
g-1
h-1
i-2

General Hospital Kurrachee
and Haidarabad.

APPENDIX D.
ANNUAL RETURN showing the Number of Sick and Percentage for the year 1872.

	Strength.	Remained.	Admitted.	Total.	Discharged.	Died.	Remaining.	Total.	Percentage of		
									Treated to strength.	Death to strength.	Death to treated.
27th Regiment N. I.	668	16	985	1,001	976	12	13	1,001	149.8	1.7	1.1
29th "	652	24	1,133	1,157	1,110	8	39	1,157	177.4	1.2	0.6
30th "	510	37	931	968	899	19	50	968	189.8	3.7	1.9
1st Regiment Sind Horse.....	354	22	640	662	616	13	33	662	187.0	3.6	1.9
2nd "	322	38	581	619	555	12	52	619	192.2	3.7	1.9
3rd "	338	37	770	807	771	10	26	807	238.1	2.9	1.2
Total.....	2,844	174	5,040	5,214	4,927	74	213	5,214	183.3	2.6	1.4

APPENDIX E.

STATEMENT showing the Sickness and Mortality among the Native Troops serving in Sind in the Bombay Presidency during the year 1872.

Regiments,	Station.	Movement in the year.	Average strength for the year.	Number of admissions during the year.	Number of deaths in hospital.	Average daily sick per cent. to average strength.	Ratio per cent. of admission to average strength.	Ratio of deaths per cent.		Invalided.		Hindoos.		Mussalmans.		Strength of the regiments on the 31st December 1872.	Regiments.	Number of deaths out of hospital and death on leave.	Average number of consecutive nights in bed.
								To treated.	To average strength.	For discharge the service.	For change of climate.	Strength.	Died per cent. to strength in and out of hospital and on leave.	Strength.	Died per cent. to strength in and out of hospital and on leave.				
27th Regiment N.I.	Kurrachee ...	None ...	668	985	12	2.6	147.4	1.1	1.7	39	15	126	...	532	0.5	658	27th Regiment N.I.	3	3.91
29th	" Haidarabad..	" ...	652	1,133	8	5.1	173.7	0.6	1.2	5	4	94	1.0	579	1.2	673	" 29th	...	10½
30th	" Jacobabad ...	" ...	510	931	19	5.4	182.5	1.9	3.7	9	15	326	4.0	367	1.3	693	" 30th	4	1
1st Regiment Sind Horse ...	" ...	" ...	354	640	13	3.6	180.7	1.9	3.6	17	14	36	0.2	457	3.9	493	1st Sind Horse ...	6	5
2nd	" ...	" ...	322	581	12	8.3	180.4	1.9	3.7	23	10	86	4.6	405	4.1	491	" 2nd	9	5
3rd	" ...	" ...	338	770	10	3.3	227.8	1.2	2.9	34	8	57	0.5	437	2.3	494	" 3rd	1	5
Total...			2,844	5,040	74	4.6	177.2	1.4	2.6	127	66	725	...	2,777	...	3,502		24	29

APPENDIX F.

ANNUAL RETURN of persons Vaccinated in the Hospitals of Native Troops and General Hospitals for the year 1872.

Regiments.	PRIMARY VACCINATION.										RE-VACCINATION.					
	Sex.		Caste.					Age.		Result.			Total.			
Male.	Female.	Christians.	Hindoos.	Mussalmans.	Parsees.	Other caste.	Under 1 year.	Above 1 year.	Successful.	Unsuccessful and doubtful.	Unknown.	Successful.	Unsuccessful and doubtful.	Unknown.	Total.	
H. M.'s 27th or 1st Belooch Regiment, Kurrachee	21	22	...	10	33	...	...	42	1	43	...	...	...	...	...	43
" 29th " " Haidarabad	40	14	...	3	51	...	...	24	30	42	12	...	...	...	...	54
" 30th Regiment N.I., Jacobabad ...	8	5	...	5	8	...	...	9	4	13	...	...	...	...	...	13
" 1st Regiment Sind Horse, Jacobabad	132	23	...	22	131	...	2	5	150	128	27	...	9	12	...	155
" 2nd " " "	24	12	...	5	31	...	...	5	31	34	2	...	...	...	...	36
" 3rd " " "	25	...	2	7	16	...	...	...	25	17	8	...	...	...	...	25
General Hospital, Kurrachee ...	14	13	16	10	1	...	...	16	11	27	...	...	...	2	...	27
" " Haidarabad ...	16	7	1	11	9	...	2	18	5	23	...	...	...	...	...	23
Total...	280	96	19	73	280	...	4	119	257	327	49	...	9	14	...	376

STATEMENT showing the SICKNESS and MORTALITY among the NATIVE

N.B.—The Regiments are placed as

REGIMENT.	Station.	Movements in the year.	Average Strength for the year.	Number of Admissions.	Number of Deaths in Hospital.	Average Daily Sick per cent. to average Strength.	Ratio per cent. of Admissions to average Strength.
PRESIDENCY DIVISION,							
Detachment, 11th Regiment N. I.	Bombay	Proceeded to Poona on duty from 18th November to 19th December 1872.	158	140	1	3.1	88.6
19th Regiment N. I. ...	Do.	None.	630	667	6	3.1	105.8
21st do. ...	Do.	Do.	563	474	3	3.4	84.2
Details do. ...	Do.	Do.	46	39	3	6.5	84.8
Right Wing 15th Regiment N. I.	Tanna	Do.	295	646	1	4.7	218.9
Detachment 19th Regiment N. I.	Janjira	Do.	16	34	...	0.7	21.2
26th Regiment N. I. ...	Surat	Do.	640	1,590	10	6.3	248.4
Detachment 21st Regiment N. I.	Str. "Dalhousie"	Do.	8	22	...	0.1	275.0
Do.	St. Turret Ships "Abyssinia" and "Magdalla".	Do.	16	..	...	...	.....
Do.	Bassadore	Do.	11	114	1	18.1	1,036.3
1st Company Native Artillery.	Aden	Do.	85	187	1	6.3	217.4
5th Regiment N. L. I. ...	Do.	Do.	592	399	6	3.6	67.3
2nd Company Sappers and Miners.	Do.	Do.	96	41	...	1.4	42.3
Aden Troop ...	Do.	Do.	89	308	...	7.8	341.5
Detachment 5th Regiment N. I.	Perim	Do.	52	70	1	1.7	134.6
POONA							
1st Regiment L. C. ...	Poona	Do.	450	648	1	4.4	144.0
1st Grenadier Regiment N. I.	Do.	Do.	677	1,204	6	4.5	177.7
2nd do.	Do.	Do.	668	1,020	7	4.1	152.6
8th do.	Do.	Arrived from Ahmedabad in February 1872.	660	1,493	3	5.0	226.2
Detachment Poona Horse.	Dhulia	None.	151	61	...	2.1	4.6
17th Regiment N. I. ...	Do.	Left Wing proceeded to Poona in November 1872.	613	807	4	4.2	130.0
Sappers and Miners ...	Kirkee	None.	407	296	2	1.9	72.7
Head Quarters 15th Regiment N. I.	Maligaum	Arrived from Mehidpur in February 1872.	351	295	3	2.2	84.0
6th Regiment N. I. ...	Belgaum	None.	631	302	3	2.0	47.8
12th do.	Do.	Do.	648	604	2	2.5	93.2
Poona Horse ...	Sirúr	Proceeded to Bombay on the 28th October and returned on the 8th December 1872.	205	194	2	2.9	94.6
11th Regiment N. I. ...	Satara	Proceeded to Poona in November and returned in December 1872.	385	576	2	4.1	14.0
28th do.	Sholápur	Do.	645	972	7	5.1	150.6
13th do.	Ahmadnagar	2 Companies marched to Sholápur in October and returned in December 1872.	650	753	3	2.8	115.8

TROOPS serving in the BOMBAY PRESIDENCY during the year 1872.

they stood on the 1st July 1872.

RATIO OF DEATHS PER CENT.		INVALIDED.		HINDOOS.		MUSSULMAN.		Strength of Regiment on 31st December 1872.	Regiment.	Average number of con- secutive nights in bed.	Number of Deaths out of Hospital and on leave.	Average Daily sick.	REMARKS.
To Treated.	To average Strength.	For discharge the service.	For change of climate.	Strength.	Died per cent. to Strength, in and out of Hospital and on leave.	Strength.	Died per cent. to Strength, in and out of Hospital and on leave.						
ADEN AND BOMBAY MARINE.													
0·7	0·6	4	11	176	1·1	11	...	187	Detachment 11th Regiment N. I.	3	1	5·9	
0·8	0·9	19	23	560	1·2	106	16·6	661	19th Regt. N. I....	4 $\frac{1}{4}$	2	20·6	
0·6	0·5	28	37	441	1·6	130	21·6	571	21st do. ...	3 $\frac{1}{4}$	7	19·0	
7·3	6·5	4	2	121	1·6	10	100·0	132	Details do. ...	...	...	3·0	
0·1	0·3	7	3	254	0·3	38	...	292	Right Wing 15th Regiment N. I.	4 $\frac{3}{4}$	...	14·7	
...	...	...	...	13	...	3	...	16	Detachment 19th Regiment N. I.	12	...	1·2	
0·6	1·6	76	6	554	1·8	86	1·1	600	26th Regt. N. I....	4	1	40·6	
...	...	...	...	7	...	1	...	8	Detachment 21st Regiment N. I.	...	...	0·1	
...	...	...	...	15	...	1	...	16	Do. ...	...	...	...
0·7	9·0	...	3	9	10·0	2	...	11	Do. ...	...	...	2·4	
0·5	1·1	5	...	72	1·3	17	...	93	1st Company Na- tive Artillery.	3 $\frac{1}{2}$	...	5·3	
1·4	1·0	48	11	507	1·5	85	...	586	5th Regt. N. L. I.	4	2	21·4	
4·7	2·0	1	1	84	2·3	11	...	95	2nd Company Sap- pers and Miners.	5 $\frac{7}{8}$	2	1·4	
...	...	2	2	30	...	70	...	87	Aden Troop ...	4	...	7·0	
1·4	1·9	...	...	52	1·9	...	...	52	Detachment 5th Regiment N. I.	...	...	1·7	
DIVISION.													
0·1	0·2	13	6	273	1·1	177	0·5	458	1st Regt. L. C. ...	7	3	20·2	
0·4	0·8	13	14	575	0·8	73	4·1	724	1st Grenadier Regi- ment N. I.	5	2	30·6	
0·6	1·0	26	20	631	0·9	80	1·2	737	2nd do. ...	3 $\frac{1}{4}$	1	28·2	
0·2	0·4	33	28	524	0·6	115	2·6	639	8th Regiment N. I.	6 $\frac{1}{2}$	2	33·8	
...	...	...	5	28	...	122	0·6	151	Detachment Poona Horse.	...	...	3·2	
0·5	0·6	21	11	575	0·9	38	6·9	356	17th Regt. N. I.	6 $\frac{1}{4}$	3	26·0	
0·6	0·4	4	5	364	1·0	49	...	413	Sappers & Miners.	4	2	8·0	
1·0	0·8	2	1	349	0·5	48	0·2	397	HeadQuarters 15th Regiment N. I.	4 $\frac{2}{3}$	...	8·8	
0·9	0·4	34	12	562	1·0	99	...	661	6th Regt. N. I. ...	4 $\frac{3}{4}$	3	13·3	
0·3	0·3	29	6	507	0·4	128	0·7	678	12th do. ...	3 $\frac{1}{2}$	1	16·0	
1·0	0·9	10	5	32	...	173	1·1	238	Poona Horse ...	8	...	6·3	
0·3	0·5	22	14	302	0·3	79	0·2	386	11th Regt. N. I....	...	...	15·8	
0·8	1·2	15	7	572	1·2	74	1·3	662	28th do.	8	1	33·4	
0·4	0·5	15	8	597	0·8	87	...	540	13th do.	4	2	18·8	

STATEMENT showing the SICKNESS and MORTALITY among the NATIVE

REGIMENT.	Station.	Movements in the year.	Average Strength for the year.	Number of Admissions.	Number of Deaths in Hospital.	Average Daily Sick per cent. to average Strength.	Ratio per cent. of Admissions to average Strength.
POONA							
Detachment 11th Regiment N. I.	Asirgarh	... The Detachment joined the Head Quarters at Satara and was replaced by another Detachment.	129	183	1	3·8	141·3
7th Regiment N. I.	... Dharwar	... Head Quarters and Left Wing left for Rajkot on the 16th December 1872.	639	564	3	3·6	88·2
14th do.	... Kolhapur	... None.	591	560	2	3·5	94·7
Detachment Poona Horse	... Kaladgi	... Do.	77	171	...	9·1	222·0
NORTHERN							
3rd Regiment N. L. I.	... Ahmedabad	... Do.	609	1,494	5	4·4	245·3
9th do.	... Do.	... Do.	472	650	3	2·9	137·7
18th do.	... Rajkot	... Do.	619	947	3	2·7	152·9
Squadron 2nd Regiment L. C.	... Do.	... Do.	118	96	...	2·8	81·3
2nd Company Native Artillery.	... Do.	... Arrived from Aden in March 1872.	122	111	1	1·6	90·9
20th Regiment N. I.	... Bhocj	... None.	630	923	2	8·5	146·5
2nd Regiment L. C.	... Deesa	... Do.	301	634	4	1·9	210·6
24th Regiment N. I.	... Do.	... Do.	619	2,086	12	8·4	336·9
Head Quarters. 10th Regiment N. I.	... Mhow	... Arrived from Maligaum in March 1872.	494	881	3	4·6	178·3
16th do.	... Do.	... Arrived from Ahmadnagar in March 1872.	646	917	12	3·1	142·1
3rd Regiment L. C.	... Neemuch	... None.	309	387	1	4·2	125·2
22nd Regiment N. I.	... Do.	... Under Canvas from 27th July to 12th August 1872 near Neemuch.	638	1,163	6	7·1	182·3
Squadron 3rd Regiment L. C.	... Nasirabad	... None.	138	196	1	3·8	147·3
23rd Regiment N. L. I.	... Do.	... Do.	626	1,891	6	9·5	302·0
Right Wing 25th Regiment N. L. I.	... Augur	... Do.	248	288	1	3·7	116·1
4th Regiment N. I.	... Baroda	... Proceeded to Poona on the 17th November and returned from on the 7th December 1872.	644	1,305	1	3·5	202·6
Detachment 9th Regiment N. I.	... Dwarka	... None.	89	149	...	6·6	167·4
Detachment 9th Regiment N. I.	... Sadra	... Arrived in December 1871 and joined its Head Quarters in October 1872.	50	42	...	2·0	84·0
Detachment 3rd Regiment N. I.	... Do.	... Arrived in March 1872.	48	21	...	0·0	43·7
Detachment 9th Regiment N. I.	... Burda Chowky	... None.	90	292	1	10·0	324·4
25th Regiment N. I.	... Mehidpur	... Do.	311	910	6	7·6	292·6
Detachment 10th and 16th Regiment N. I.	... Indore	... Detachment 10th Regiment N. I. was relieved by the Detachment 16th on the 6th March 1873, and the Detachment 10th relieved the 16th, on the 13th Sept. 1873.	233	352	...	2·1	151·0

TROOPS serving in the BOMBAY PRESIDENCY during the year 1872—continued.

RATIO OF DEATHS PER CENT.		INVALIDED.		HINDOOS.		MUSSULMAN.		Strength of Regiment on 31st December 1872.	Regiment.	Average number of con- secutive nights in bed.	Number of Deaths out of Hospital and on leave.	Average aily sick.	REMARKS.
To Treated.	To average Strength.	For discharge the service.	For change of climate.	Strength.	Died per cent. to Strength, in and out of Hospital and on leave.	Strength.	Died per cent. to Strength, in and out of Hospital and on leave.						
DIVISION—continued.													
0.5	0.7	10	2	147	0.6	6	...	153	Detachment 11th Regiment N. I.	19 $\frac{17}{25}$	...	5.0	
0.4	0.4	13	10	601	0.4	95	...	696	7th Regt. N. I. ...	5 $\frac{1}{2}$	...	23.3	
0.3	0.3	11	18	387	0.2	76	2.6	496	14th do. ...	11 $\frac{3}{8}$	1	21.2	
...	...	...	...	13	...	64	...	77	Detachment Poona Horse.	3	...	7.8	
DIVISION.													
0.3	0.8	29	19	471	0.8	134	...	605	3rd Regt. N. L. I.	6 $\frac{1}{2}$	...	27.4	
0.4	0.6	23	6	433	1.2	61	...	494	9th do. ...	3	3	14.7	
0.3	0.4	27	12	590	0.6	89	1.3	679	18th do. ...	8 $\frac{1}{4}$	2	17.2	
...	...	...	1	70	1.4	81	1.2	151	Squadron 2nd Re- giment L. C.	6	2	3.4	
0.9	0.8	4	1	113	0.8	16	0.1	129	2nd Company Na- tive Artillery.	4	1	2.0	
0.2	0.3	24	22	603	1.0	85	...	688	20th Regt. N. I. ...	6 $\frac{3}{4}$	4	53.7	
0.6	1.3	5	4	166	1.8	148	0.6	314	2nd Regt. L. C. ...	7	3	15.2	
0.5	1.9	29	24	515	2.1	113	1.2	628	24th Regt. N. I. ...	5	4	52.5	
0.3	0.6	29	7	295	2.0	61	1.8	356	Head Quarters 10th Regiment N. I.	8 $\frac{1}{3}$	4	23.0	
1.3	1.8	43	8	551	2.4	118	8.8	669	16th Regt. N. I. ...	6	3	20.7	
0.2	0.3	10	8	201	1.0	154	0.7	355	3rd Regt. L. C. ...	3 $\frac{3}{4}$	2	13.8	
0.4	0.9	21	4	563	1.5	94	...	657	22nd Regt. N. I. ...	5.1	2	45.5	
0.4	0.7	...	6	99	...	34	0.3	133	Squadron 3rd Re- giment L. C.	5 $\frac{1}{2}$	1	5.1	
0.3	0.9	39	7	476	1.2	155	...	631	23rd Regt. N. L. I.	7	4	60.9	
0.3	0.4	9	2	211	1.0	37	...	248	Right Wing 25th Regiment N. L. I.	4 $\frac{1}{2}$	...	9.2	
0.0	0.1	19	11	608	0.1	71	...	679	4th Regt. N. I. ...	5	...	23.1	
...	...	...	3	76	...	13	...	89	Detachment 9th Regiment N. I.	3	...	0.6	
...	...	...	...	46	...	4	...	...	Detachment 9th Regiment N. I.	...	...	1.0	
...	...	...	...	42	...	6	...	54	Detachment 3rd Regiment N. I.	...	...	0.4	
0.3	1.1	...	...	82	1.4	7	...	89	Detachment 9th Regiment N. I.	6	...	9.3	
0.6	1.9	30	14	250	2.4	46	7.7	296	25th Regt. N. I.	6 $\frac{3}{4}$	3	23.7	
...	...	...	4	150	...	79	...	196	Detachment 10th Regiment N. I.	3 $\frac{1}{2}$	1	5.0	

STATEMENT showing the SICKNESS and MORTALITY among the NATIVE

REGIMENT.	Station.	Movements in the year.	Average Strength for the year.	Number of Admissions.	Number of Deaths in Hospital.	Average Daily Sick per cent. to average Strength.	Ratio per cent. of Admissions to average Strength.
SIND							
27th Regiment N. I. ...	Kurrachee ...	None.	668	985	12	2·6	147·4
29th do. ...	Haidarabad ...	Do.	652	1,133	8	5·1	173·6
30th do. ...	Jacobabad ...	Do.	510	931	19	5·4	182·5
1st Sind Horse ...	Do. ...	Do.	354	640	13	3·6	180·7
2nd do. ...	Do. ...	Do.	453	581	12	8·3	180·4
3rd do. ...	Do. ...	Do.	338	770	10	3·3	227·1

Summary of the Statistics

YEARS.	Average daily Strength.	Admissions into Hospital.	Ratio per cent. of Admissions to average Strength; mean of all.	Average daily Sick per cent. to average Strength; mean of all.	Deaths in Hospital.	Ratio of Deaths in Hospital per cent. to average Strength.	Ratio of Deaths in Hospital per cent. to Admissions.
1872	22,903	36,209	158·09	4·54	226	0·98	0·62
1871	22,959	29,733	129·50	4·31	236	1·03	0·79
1870	22,715	28,380	139·08	4·33	191	0·84	0·68

TROOPS serving in the BOMBAY PRESIDENCY during the year 1872—concluded.

RATIO OF DEATHS PER CENT.		INVALIDED.		HINDOOS.		MUSSULMAN.		Strength of Regiment on 31st December 1872.	Regiment.	Average number of con- secutive nights in bed.	Number of Deaths out of Hospital and on leave.	Average daily Sick.	REMARKS
To Treated.	To average Strength.	For discharge the service.	For change of climate.	Strength.	Died per cent. to Strength, in and out of Hospital and on leave.	Strength.	Died per cent. to Strength, in and out of Hospital and on leave.						
DISTRICT.													
1.1	1.7	33	15	126	...	532	0.5	658	27th Regt. N. I....	3	3	18.0	
0.7	1.3	11	4	94	1.0	579	1.2	676	29th Do. ...	10 $\frac{1}{2}$	...	33.3	
2.0	3.7	9	15	326	4.0	367	1.3	693	30th Do. ...	4 $\frac{3}{4}$	1	29.0	
1.9	3.6	17	14	36	0.2	457	3.9	493	1st Sind Horse ...	5	6	13.5	
1.9	3.7	23	10	86	4.6	405	4.1	491	2nd Do. ...	5	9	26.9	
1.2	2.9	34	8	57	0.5	437	2.3	371	3rd Do. ...	5	1	27.3	

for the year 1872.

Deaths out of Hospital and on leave.	Total Deaths out of the average Strength in the year.	Ratio per cent. of total Deaths to the average Strength.	Ratio per cent. to Strength of Hindoos who died in and out of Hospital and on leave.	Ratio per cent. to Strength of Mussulmans who died in and out of Hospital, and on leave.	Ratio per cent. to Strength invalided for Discharge the Service.	Ratio per cent. to Strength invalided for Change of Climate.
95	321	1.40	0.39	3.02	3.98	2.13
97	383	1.45	0.40	1.25	3.12	2.10
95	286	1.26	0.32	0.94	3.71	2.33

APPENDIX I.—continued.

REGIMENTS.	STATION.	Strength.	Average Daily Sick.	1872.																			
				CLASSES OF DISEASES—continued.																			
				LOCAL DISEASES.																			
				Diseases of the Nervous System 59 to 104.		Insanity 105 to 110.		Diseases of the Eye 111 to 185.		Diseases of the Heart 219 to 244 and 250 to 258.		Diseases of the Lungs 290 to 337.		Diseases of the Stomach and Intestines 449 to 500.			Diseases of the Liver 501 to 520.		Diseases of the Spleen 524 to 530.				
Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.						
1st Regiment L. C.	Poona	450	20·2	8	1	...	...	15	...	...	...	4	...	12	...	58	12	...	1	5
2nd do.	Deesa and Rajkote ...	419	18·6	...	...	...	...	36	...	...	...	11	1	2	...	7	16	...	...	1
3rd do.	Neemuch & Nasirabad..	447	18·9	6	...	...	...	23	...	1	...	7	...	8	...	11	15	...	5	4
1st Sind Horse	} Jacobabad	354	13·5	...	...	...	...	8	...	...	...	27	9	2	...	19	1	5	6	14
2nd do.		453	26·9	2	...	...	...	10	...	...	...	25	2	2	...	14	4	1	4	...
3rd do.		338	27·3	1	...	...	...	9	...	1	1	13	1	17	1	9	4	1	1	11
Poona Horse	Serur, Dhulia, and Kaladgi.	433	17·3	6	...	1	...	18	...	...	...	16	...	21	1	13	28	...	3	2
Sappers and Miners	Kirkee and Aden	503	9·4	1	...	...	...	9	...	3	...	13	...	3	...	17	4	...	1	...
1st Company Native Artillery.	Aden	85	5·3	...	...	...	...	...	...	...	...	7	...	4	...	11	3	...	2	...
2nd Cavalry Native Artillery.	Rajkot	122	2·0	3	1	...	...	1	...	...	...	6	...	5	...	1	4	...	1	...
1st Regiment N. I.	Poona	677	30·6	6	...	1	...	7	...	2	1	4	...	19	...	39	50	2	...	1			
2nd do.	Do.	668	28·2	19	...	...	...	11	...	3	1	35	1	21	...	56	41	...	1	...
3rd do.	Ahmedabad and Sadra.	657	27·8	3	...	1	...	43	...	1	...	99	4	15	...	45	24	...	7	2			
4th do.	Baroda	644	23·1	6	...	1	...	31	...	1	...	39	1	20	...	18	6	...	...	...
5th do.	Aden and Perim	644	23·1	4	...	1	...	5	...	...	...	19	1	18	...	12	13	...	2	...
6th do.	Belgaum	631	13·3	2	1	2	...	5	...	...	...	16	...	14	1	3	20	...	...	1
7th do.	Dharwar	639	23·3	7	...	...	...	18	...	1	...	20	...	20	...	13	31	...	5	1
8th do.	Poona	660	33·8	1	...	1	...	28	...	7	...	16	1	20	...	60	26	...	5	10			
9th do.	Ahmedabad, Dwarka, Sadra, and Burda-Chowky.	701	25·6	1	...	...	...	45	...	6	...	12	...	13	...	36	16	...	4	1
10th do.	Mhow, Indore and Asirgarh.	772	23·0	1	...	...	...	25	...	...	...	30	1	31	1	19	15	1	...	1
11th do.	Satara, Bombay and Asirgarh.	672	26·7	5	...	2	...	27	...	2	1	43	2	24	...	22	33	...	...	5	
12th do.	Belgaum	648	16·0	7	...	...	...	29	...	1	...	21	...	18	...	15	72	...	2	3
13th do.	Ahmadnagar	650	18·8	1	1	...	...	32	...	1	...	45	...	12	...	12	57	...	3	1	
14th do.	Kolhapur	591	21·2	6	...	...	...	21	...	...	...	22	1	11	...	15	12	...	3	3
15th do.	Malligaum and Tanna.	646	23·5	5	...	1	...	19	...	...	...	21	3	26	...	62	30	...	...	2
16th do.	Mhow and Indore.....	646	25·7	10	...	2	...	18	...	...	...	65	2	26	1	27	1	22	...	8
17th do.	Dhulia, Bombay, and Poona.	613	26·0	5	...	...	...	91	...	2	...	43	1	10	...	86	1	28	...	5
18th do.	Rajkot	619	17·2	12	...	...	...	31	...	...	...	26	1	10	...	6	7	...	...	5
19th do.	Bombay and Junjira...	646	21·8	3	...	...	...	26	...	...	...	24	...	23	...	23	1	14	...	2
20th do.	Bhooj	630	53·7	9	...	2	...	18	...	2	...	25	1	32	...	17	13	...	...	4	
21st do.	Bombay	598	22·1	20	...	...	...	15	...	2	...	44	2	23	...	10	28	...	...	2
Details Regiment N. I.	Do.	46	3·0	1	1	...	...	...	...	...	...	3	1	...	...	2	...	...	4	1
22nd do.	Neemuch	638	45·5	8	1	1	...	13	...	1	...	26	...	18	...	5	19	...	1	1			
23rd do.	Nasirabad	626	60·9	5	...	2	...	27	...	10	1	47	1	33	...	34	41	1	1	17			
24th do.	Deesa	619	52·5	9	1	...	...	41	...	1	...	20	6	28	...	24	46	...	6	5	
25th do.	Mehidpur and Augur .	559	32·9	5	...	...	...	35	...	1	...	25	...	28	...	25	39	...	5	1
26th do.	Surat	640	40·6	3	...	...	...	25	...	...	...	33	2	53	...	36	1	42	...	7
27th do.	Kurrachee	668	18·0	4	...	...	...	28	...	2	...	64	5	13	1	15	1	38	...	4
28th do.	Sholapur	645	33·4	6	...	1	...	22	...	...	...	14	1	37	1	38	31	...	2	3
29th do.	Haidarabad	652	33·3	1	...	...	...	42	...	2	...	32	6	19	...	15	24	...	1	1
30th do.	Jacobabad	510	29·0	3	1	...	...	26	...	...	...	50	11	25	...	17	2	13	...	8
Aden Troop	Aden	89	7·0	3	...	...	...	1	...	...	...	4	...	5	...	10	...	...	...	6
Total.....		22,903	1,040·0	208	8	19	...	933	...	53	5	1,116	68	741	7	977	8	956	4	107	7	162	1

APPENDIX I.—concluded.

REGIMENTS.	STATION.	Strength.	Average Daily Sick.	1872.													
				CLASSES OF DISEASES—concluded.													
				Local Diseases.								Old Age and Debility 904 and 905.	Poisons 906 to 991.	Injuries.		Total.	
				Gonorrhoea 585 to 594.	Abscess 819 and elsewhere according to site.	Ulcers 859.	Skin Diseases 827 to 901.	Other Diseases of this Class.	Injuries 992 to 1,146 and Blistered Feet 1,148.	Punishment 1,147.							
Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.				
1st Regiment L. C.	Poona	450	20.2	12	4	20	78	19	1	67	675	1					
2nd do.	Deesa and Rajkot	419	18.6	7	4	2	34	5	1	52	736	4					
3rd do.	Neemuch & Nasirabad.	447	18.9	8	1	1	34	12	4	85	606	2					
1st Sind Horse	{ Jacobabad	354	13.5	2	3	22	48	7	1	62	662	13					
2nd do.		453	26.9	8	40	48	14	1	14	56	619	12					
3rd do.		338	27.3	8	1	63	81	11	6	93	807	10					
Poona Horse	Serur, Dhulia, and Kaladgi.	433	17.3	9	3	6	24	6	2	59	438	2					
Sappers and Miners	Kirkee and Aden	503	9.4	6	2		7	11	5	35	343	2					
1st Company Native Artillery.	Aden	85	5.3			5	3	1		7	193	1					
2nd Company Native Artillery.	Rajkot	122	2.0		1	1	2	3		17	111	1					
1st Regiment N. I.	Poona	677	30.6	6	36	13	11	11	2	57	1,225	6					
2nd do.	Do.	668	28.2	2	25	44	63	12	8	62	1,062	7					
3rd do.	Ahmedabad and Sadra.	657	27.8	7	1	2	45	21	6	59	1,536	5					
4th do.	Baroda.....	644	23.1	1	19	3	19	8	2	66	1,321	1					
5th do.	Aden and Perim	644	23.1	4	3	6	21	34	1	50	489	7					
6th do.	Belgaum	631	13.3	1		4	39	1	6	31	315	3					
7th do.	Dharwar	639	23.3	11	15	2	32	25		94	602	3					
8th do.	Poona	660	33.8	3	7	13	63	50	1	50	1,538	3					
9th do.	Ahmedabad, Dwarka, Sadra, and Burda-Chowky.	701	25.6	2	20	5	33	36	1	35	1,153	4					
10th do.	Mhow, Indore, and Asirgarh.	727	23.0	11	27	26	50	9	2	91	1,115	3					
11th do.	Satara, Bombay, and Asirgarh.	672	26.7	13	5	27	48	40	2	135	923	4					
12th do.	Belgaum	648	16.0	9	27	42	67	35	1	47	625	2					
13th do.	Ahmadnagar	650	18.8	19	4	1	38	4	8	87	764	3					
14th do.	Kolhapur	591	21.2	22	3	2	65	13		56	581	2					
15th do.	Malligaum and Tanna.	646	23.5	4	9	8	30	11		27	964	4					
16th do.	Mhow and Indore.....	646	25.7	2	13	29	47	21	29	192	926	12					
17th do.	Dhulia, Bombay, and Poona.	613	26.0	3	9		56	23	19	73	827	4					
18th do.	Rajkot	619	17.2	9	8	12	34	21	11	97	961	3					
19th do.	Bombay and Junjira...	646	21.8	23	32	12	48	38	1	81	736	6					
20th do.	Bhooj	630	53.7	2	4	6	59	9	6	84	947	2					
21st do.	Bombay	598	22.1	8	4	3	63	32	8	45	641	4					
Details Regiment N. I.	Do.	46	3.0			2	2	1	2	1	41	3					
22nd do.	Neemuch.....	638	45.5	5	10	5	28	13	10	86	1,245	6					
23rd do.	Nasirabad	626	60.9	6	3	12	70	11		64	1,925	6					
24th do.	Deesa	619	52.5	6	4	3	46	13	1	82	2,104	12					
25th do.	Mehidpur and Augur .	559	32.9	4	2	2	35	20	7	103	1,220	7					
26th do.	Surat	640	40.6	7			60	30	13	90	1,661	10					
27th do.	Kurrachee	668	18.0	11	10	8	30	17		91	1,001	12					
28th do.	Sholapur	645	33.4	27	9	1	35	8	4	72	998	7					
29th do.	Haidarabad.....	652	33.3	21	15	39	33	6		76	1,157	8					
30th do.	Jacobabad	510	29.0	8	23	42	64	27	8	59	968	19					
Aden Troop	Aden	89	7.0	2			30			29	311						
Total.....		22,903	1,040.6	319	405	1,543	1,689	2,681	5,245	11,38	2,805	4,15	37,072	226			

APPENDIX I.

Annual General Return exhibiting the sick of Her Majesty's Native Troops in the Bombay Presidency for the year 1872, compared with 1871, arranged according to authorized classification and nomenclature.

		1871.																					
		CLASSES OF DISEASES.																					
		GENERAL DISEASES.												LOCAL DISEASES.									
		Sub-Division A.								Sub-Division B.				Diseases of the Nervous System 59 to 104.		Insanity 105 to 110.		Diseases of the Eye 111 to 185.		Diseases of the Heart 219 to 244 and 250 to 258.		Diseases of the Lungs 290 to 337.	
		Fevers.				Malignant Cholera 18. Other Diseases of this Class.				Rheumatic affections 34 to 42		Syphilitic affections 43.												Scorbutic affections 54.		Dropsis 57. Other Diseases of this Class.
STATION.	Strength.	Average Daily Sick.		Eruptive 1 to 5.	Continued 6 to 14.									Malarious 15 and 16.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.
Poona	388	20.8	1	481	...	8	38	1	...	7	29	1	1	18	...
Deesa and Rajkot	393	9.8	1	...	1	154	1	19	8	...	1	3	24	6	2
Neemuch and Nasirabad.	428	25.7	...	12	...	312	1	57	19	...	3	4	1	1	27	...	1	20	...
Jacobabad	359	14.8	333	3	19	7	3	16	26	5
...	353	29.4	246	3	14	6	...	2	4	12	38	6
...	495	30.3	426	2	17	12	...	2	1	...	1	15	23	3
Sirur, Dhulia, and Kaladgi.	439	12.9	...	35	...	117	1	17	6	...	2	1	1	...	25	8	...
Kirkee and Aden	492	13.7	...	164	...	156	...	23	7	...	5	8	3	...	12	17	2
Rajkot	121	3.8	94	1	3	1	1	2	5	...
Aden	94	2.3	...	80	...	12	...	10	...	1
Belgaum	662	11.8	148	1	37	11	2	6	5	...	11	1	...	10	...
Poona	627	25.5	4	443	2	92	16	...	9	3	9	1	1	25	1	...	28	1
Mhow and Indore	651	23.5	2	1	1	386	2	45	16	...	9	...	23	1	2	48	46	2
Paroda	650	15.0	1	...	...	285	...	38	1	3	5	1	1	3	3	1	...	19	1	...	37	1
Aden and Perim	678	38.9	...	321	1	181	...	45	22	...	42	3	6	1	2	7	4	3	13	3
Ahmedabad, Burda Chowky, Dwarka, and Sadra.	690	28.1	...	1	...	513	4	68	4	...	1	...	1	...	18	1	1	...	27	1	1	15	2
Dharwar	600	32.3	212	1	80	5	...	2	2	1	...	15	1	...	24	1
Ahmedabad and Sadra.	661	38.3	...	2	...	911	3	74	21	...	6	3	60	1	...	17	1
Poona, Burda Chowky, Sadra, and Dwarka.	636	12.4	2	...	...	279	...	7	4	...	...	1	4	1	...	...	...	15	1	1	7	1
Malligaum and Tanna .	620	30.0	2	153	...	487	1	28	7	...	4	1	...	...	12	1	...	42	1	1	19	...
Satara, Asirgarh, and Bombay.	685	30.0	3	...	...	509	2	72	15	...	3	...	2	...	6	2	...	38	...	...	47	...
Belgaum	609	26.3	1	...	...	165	...	71	25	...	43	...	7	...	11	...	...	30	1	...	25	1
Surat	632	23.8	13	201	...	160	3	55	25	...	7	2	...	3	5	...	...	31	1	...	54	...
Mhow, Kohlapur, and Indore.	749	24.5	...	...	...	295	...	52	24	...	2	...	9	...	4	...	...	20	...	...	30	2
Mehidpur and Augur.	605	26.3	7	8	...	957	2	27	2	...	3	...	3	...	6	...	...	36	3	1	20	2
Ahmadnagar	690	17.7	3	...	...	411	...	32	8	...	1	...	6	...	8	...	...	41	...	...	39	3
Kohlapur	702	17.0	9	3	...	110	...	45	15	...	4	...	1	1	9	...	...	22	4	...	37	...
Rajkot	627	17.4	...	1	...	485	2	45	1	16	...	12	...	2	24	...	...	18	1	...	21	2
Bombay and Junjeera.	646	28.6	35	...	...	254	...	61	13	...	19	...	...	...	16	...	...	19	4	...	56	...
Bhuj	643	28.6	...	3	...	196	2	37	6	1	7	1	...	1	9	1	...	4	1	...	31	2	
Bombay and Junjeera .	610	22.5	2	69	...	198	2	39	1	2	4	1	...	3	4	...	...	19	1	1	35	2
Bombay	24	2.0	...	...	...	8	1	1	1	...	1	...	1	...	...	1	...	...	...	...	3	1
Neemuch	621	38.3	3	2	...	765	...	18	20	...	1	...	3	...	2	2	...	25	...	...	15	1
Poona	643	33.0	2	122	...	363	...	57	21	...	4	...	14	1	17	...	...	19	2	...	80	...
Deesa	623	16.2	3	...	...	334	3	27	1	8	1	...	2	1	...	...	...	63	...	...	37	4
Dhulia	591	31.5	...	47	...	449	1	43	11	...	2	1	...	6	8	1	...	39	2	...	13	2	
Nasirabad	615	77.2	...	2	...	1,314	4	94	15	...	9	1	3	1	5	2	...	27	...	...	16	3
Haidarabad, and Kurrachee.	673	14.0	...	...	...	153	...	9	47	...	5	...	...	...	5	...	...	34	1	...	48	2
Sholapur	643	17.0	3	...	...	362	...	69	27	...	5	...	3	...	6	...	...	11	...	...	16	2
Kurrachee and Haidarabad.	644	34.1	...	...	...	177	3	30	43	1	6	...	1	...	1	1	...	34	...	...	38	3
Jacobabad	563	39.8	...	...	...	546	5	50	2	8	4	1	...	3	15	1	...	29	...	1	62	9
Aden	84	6.0	...	123	...	45	...	12	8	...	2	...	8	...	...	...	...	3	...	...	7	...
Total	22,959	990.2	97	1,351	2	14,432	55	2,164	8	573	3	238	256	12	24	1	993	36	10	1,107	71	...	

APPENDIX I—concluded.

Station.	Strength.	Average Daily Sick.	1871.															
			CLASSES OF DISEASES—concluded.															
			LOCAL DISEASES—concluded.										INJURIES.					
			Diseases of the Stomach and Intestines 449 to 500.			Diseases of the Liver 501 to 520.	Diseases of the Spleen 524 to 530.	Gonorrhoea 585 to 594.	Abscess 819 and elsewhere according to site.	Ulcers 859.	Skin Diseases 827 to 901.	Other Diseases of this Class.	Old Age and Debility 904 and 905.	Poisons 906 to 991.	Injuries 992 to 1,146 and blistered feet 1,148.	Punishment 1,147.	Total.	
			Diarrhoea.	Dysentery.	Other.													
			Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.	Treated.
			Died.	Died.	Died.	Died.	Died.	Died.	Died.	Died.	Died.	Died.	Died.	Died.	Died.	Died.	Died.	Died.
Poona	388	20·8	7...	25...	5...	1...	2...	11...	4...	10...	57...	14...	3...	...	63...	...	786	1
Deesa and Rajkot	393	9·8	4...	9 1	9...	...	...	1...	8...	2...	21 1	12...	...	1...	49...	...	333	5
Neemuch and Nasirabad.	428	25·7	10...	9...	21...	2...	1...	10...	1...	7...	59...	8...	4...	...	90...	...	678	2
Jacobabad	359	14·8	2...	9...	4...	1...	5...	4...	3...	23...	40...	10...	...	...	87...	...	597	9
Sirur, Dhulia, and Kaladgi	353	29·4	3...	5...	4...	...	12 1	11...	36...	55...	4...	10 1	8 1	...	91...	...	561	12
	495	30·3	9...	5...	2...	3...	12...	17...	10...	64...	58...	26...	2...	2...	96...	...	804	5
	439	12·9	9...	7...	19...	2...	2...	4...	5...	6...	31...	11...	6...	1...	72...	...	389	1
Kirkee and Aden	492	13·7	8 1	4...	10 1	2...	1...	...	9...	5...	26...	2...	6...	...	45...	...	510	7
Rajkot	121	3·8	10...	5...	5...	1...	...	...	...	1...	3...	7...	...	...	18...	...	156	1
Aden	94	2·3	2...	...	...	...	...	...	3...	1...	...	...	3 1	1...	5...	...	118	1
Belgaum	662	11·8	16...	18...	25...	...	...	2...	42 1	6 1	10...	16...	...	2...	58...	...	426	3
Poona	627	25·5	20...	14...	67...	3...	4...	3...	19...	19...	81...	35...	6...	2...	53...	22...	979	4
Mhow and Indore	651	23·5	12...	21...	15...	15...	1...	11...	...	4...	73...	34...	2...	1 1	87...	...	858	7
Baroda	650	15·0	6...	15...	14...	2...	...	6...	31...	5...	6...	7...	1...	...	47...	...	538	3
Aden and Perim	678	38·9	14...	5...	25...	4 2	...	3...	6...	12...	48 1	11 1	35 1	1 1	24...	...	832	18
Ahmedabad, Burda Chowky, Dwarka, and Sadra.	690	28·1	45...	18...	33...	2 1	1...	5...	4...	8...	33...	32...	19 1	3...	98...	...	956	10
Dharwar	600	32·3	22...	14...	32...	1...	2...	8...	7...	3...	74...	12...	...	...	124...	78...	721	2
Ahmedabad and Sadra.	661	38·3	46...	12...	19...	5 1	4...	5...	3...	5...	62...	44 3	...	...	122...	...	1,423	9
Poona, Burda Chowky Sadra, and Dwarka.	636	12·4	2...	19...	3...	...	1...	3...	5...	12...	24...	12...	5...	...	32 1	1...	439	4
Malligaum and Tanna.	620	30·0	42...	27 2	34...	7...	...	16...	15...	9...	52...	9...	1...	1...	67...	1...	1,038	5
Satara, Asirgarh, and Bombay.	635	30·0	29 1	23 1	48...	3...	2...	8...	...	7...	43...	56 1	4 1	...	176...	...	1,096	6
Belgaum	609	26·3	22...	34 1	94...	3...	3...	6...	9...	67...	62...	25...	12...	2...	98...	...	816	2
Surat	632	23·8	36 1	26...	54...	1...	1...	8...	7...	8...	66...	5...	9 2	1...	97...	...	891	9
Mhow, Kolhapur, and Indore.	749	24·5	11...	32 1	13...	3...	8...	6...	5...	5...	52...	15...	...	...	104...	1...	694	4
Mehidpur and Augur.	605	26·3	13 1	11...	24 2	...	3...	7...	2...	2...	35...	9 1	3...	...	46...	...	1,229	9
Ahmadnagar	690	17·7	8...	4...	14...	4...	8...	6...	11...	13...	56...	23 2	14...	2...	54...	...	766	5
Kolhapur	702	17·0	9...	33...	22...	3...	4...	2...	9...	...	91...	23...	2...	...	122...	...	581	1
Rajkot	627	17·4	5...	18...	12 1	1...	1...	9...	5...	20...	42...	15...	12...	1...	74 1	...	840	7
Bombay and Junjeera.	646	28·6	43...	56...	31...	3 1	6...	16...	70...	6...	47...	38...	5...	1...	92...	...	896	1
Bhuji	643	28·6	41...	15...	31...	2 1	6...	1...	9...	3...	37...	17...	9...	1...	103...	...	572	8
Bombay and Junjeera.	610	22·5	25...	17 1	14...	1...	...	11...	2...	6...	56...	10...	3...	...	35...	...	563	8
Bombay	24	2·0	...	1...	...	...	...	1...	...	2...	2...	2...	2 1	...	...	...	25	3
Neemuch	621	38·3	17...	16...	15...	3 1	3...	5...	15...	10...	16...	4...	2...	...	105...	...	1,069	2
Poona	643	33·0	9...	11...	31...	...	3...	14...	8...	39...	72...	13...	...	2...	48 1	...	942	2
Deesa	623	16·2	24...	7...	23...	4...	...	9...	13...	1...	38...	12...	2...	3...	48...	...	660	9
Dhulia	591	31·5	6...	21...	27...	2...	5...	2 1	3...	24...	42...	20...	6...	...	72...	...	854	6
Nasirabad	615	77·2	42...	13 1	36...	4...	3...	21...	1...	2...	47...	18...	7...	1...	62...	...	1,744	11
Haidarabad and Kurrahee.	673	14·0	3...	13...	15...	4 1	6...	23...	15...	6...	31...	13...	...	...	40...	1...	472	3
Sholapur	643	17·0	13...	23...	19...	2...	7...	7 1	8...	1...	30...	12...	...	6...	71...	...	701	3
Kurrahee and Haidarabad.	644	34·1	7...	16...	13...	1...	...	30...	24...	64...	33...	14...	5...	...	112...	...	651	8
Jacobabad	563	39·8	35...	13...	19...	7...	7...	15...	86...	22...	46...	21...	18 1	4...	105...	...	1,118	20
Aden	84	6·0	3...	1...	11...	2...	1...	2...	1...	5...	21...	3...	...	...	27...	...	285	...
Total	22,959	990·2	690 4	645 8	912 4	104 8	125 1	1329 2	514 1	566 1	1,727 2	2,680 9	216 9	939 2	3,019 3	104 1	30,608	236

APPENDIX II.

Statement showing the number of Recruits who have joined the Service, the Admissions, Cures, and Deaths from Small-pox, Dracunculus, &c. among the Native Troops of the Bombay Presidency for the year 1872.

Corps.	Stations.	Recruits joined.	Small-pox.			Dracunculus.			Surgical operations.			Snake-bite.		Hydrophobia.		Sun-stroke.		Pneumonia.			Dengue.		
			Admitted.	Cured.	Died.	Admitted.	Cured.	Died.	Admitted.	Cured.	Died.	Admitted.	Cured.	Admitted.	Cured.	Admitted.	Cured.	Admitted.	Cured.	Died.	Admitted.	Cured.	Died.
1st Regiment L. C.	Poona	22	1	1	...	6	6	...	2	1	...	...	...	...	...	...	...	1	1	...	3	3	...
2nd do.	Deesa	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	204	203	...
Squadron 2 do.	Rajkot	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3rd Regiment do.	Neemuch	37	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
Detachment 3rd do.	Nasirabad	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1st Sind Horse	Jacobabad	44	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	23	14	9	...	...	...
2nd do.	Do.	43	...	...	...	...	...	...	45	41	2	...	...	...	...	...	...	18	11	2	...	...	...
3rd do.	Do.	49	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	8	2	...	...	...
Poona Horse	Sirur	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Detachment do.	Dhulia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. do.	Kaladgi	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sappers and Miners	Kirkee	...	2	2	...	7	7	...	...	...	...	...	...	...	...	...	...	...	...	...	12	12	...
2nd Co. do.	Aden	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...
1st Co. Native Artillery	Do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	88	88	...
2nd do.	Rajkot	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	1	...
1st Regiment N. I.	Poona	...	6	4	2	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	524	520	...
2nd do.	Do.	76	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	237	237	...
3rd do.	Ahmedabad	29	...	...	...	9	9	...	...	...	...	...	...	...	...	...	...	3	3	...	526	525	1
Detachment do.	Sadra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4th Regiment N. I.	Baroda	28	...	...	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	514	514	...
5th do.	Aden	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	35	35	...
Detachment 5th do.	Perim	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...	...
6th Regiment N. I.	Belgaum	34	2	2	...	...	...	...	1	...	...	...	...	...	...	...	...	4	2	...	...	...	...
7th do.	Dharwar	...	10	10	...	24	23	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...
8th do.	Poona	...	7	7	...	15	15	...	...	...	...	...	...	...	...	...	...	2	2	...	224	222	...
9th do.	Ahmedabad	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	269	269	...
Detachment 9th do.	Dwarka	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. do.	Sadra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. do.	Burda Chowky.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10th Regiment N. I.	Mhow	...	2	2	...	11	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Detachment 10 do.	Indore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. do.	Asirgarh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11th Regiment N. I.	Satara	44	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Detachment 11th do.	Bombay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. do.	Asirgrah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12th Regiment N. I.	Belgum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
13th do.	Ahmadnagar	...	24	22	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14th do.	Kolhapur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
15th do.	Malligaum	40	...	...	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Right Wing 15th do.	Tanna	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	200	200	...
16th do.	Mhow	45	10	10	...	3	1	...	...	...	...	...	...	...	...	...	...	3	1	1	...	...	...
Right Wing 16th do.	Indore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17th Regiment N. I.	Dhulia	39	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	8	7	1	...	...	...
18th do.	Rajkot	...	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...
19th do.	Bombay	80	5	5	...	8	7	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...
Detachment 19th N. I.	Junjeera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20th Regiment N. I.	Bhuj	...	3	2	...	1	...	...	1	...	...	...	...	...	...	...	...	3	...	...	11	11	...
21st do.	Bombay	60	2	...	...	9	9	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	...
Detachment 21st do.	On Board the "Dhalousie."	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	6	...
Do.	Do. the Bassadore.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Do.	Do. "Magdalla."	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Do.	Do. "Abysinia."	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Details 21st do.	Bombay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
22nd Regiment N. I.	Neemuch	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23rd do.	Nasirabad	39	...	...	...	5	5	...	...	...	...	...	...	...	...	...	...	2	1	1	...	...	...
24th do.	Deesa	25	3	3	...	2	1	...	...	...	...	...	...	...	...	...	...	2	2	...	579	579	...
25th do.	Mehidpur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Right Wing 25th Do.	Augur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26th Regiment N. I.	Surat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	345	345	...
27th do.	Kurrachee	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	1	412	412	...
28th do.	Sholapur	25	5	5	...	6	6	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...
29th do.	Haidarabad	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	175	175	...
30th do.	Jacobabad	...	...	...	...	4	4	...	...	...	...	...	...	...	...	...	...	25	14	7	...	...	...
Aden Troop	Aden	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Total...		772	94	87	2	127	120	...	50	43	2	2	1	...	...	2	2	133	85	27	4,364	4,360	1

APPENDIX III.

Return showing the Admissions and Deaths, &c., amongst the Native Troops of the Bombay Presidency at the several Stations for the year 1872 compared with 1871.

1872.							1871.						
Divisions.	Regiment.	Station.	Average Strength	Average daily sick.	Admissions.	Deaths.	Regiment.	Station.	Strength	Daily Sick.	Admissions.	Death.	
PRESIDENCY DIVISION.	Detachment 11th Regt. N. I.	Bombay	158	5.9	140	1	1 Detachment 11th Regt. N. I.	Bombay	177	3.0	103	1	
	19th Regiment N. I.	Do.	630	20.6	667	6	19th Regiment N. I.	Do.	646	28.6	873	1	
	21st do.	Do.	563	19.0	474	3	21st do.	Do.	575	20.0	451	8	
	Details do.	Do.	46	3.0	39	3	Details do.	Do.	24	2.0	18	3	
	Right Wing 15th Regt. N. I.	Tanna	295	14.7	646	1	Left Wing 10th do.	Tanna	270	13.0	393	4	
	Detachment 19th Regt. N. I.	Junjeera	16	1.2	34	...	Detachment 21st do.	Junjeera	35	2.5	97	...	
	26th Regiment, N. I.	Surat	640	40.6	1,590	10	13th do.	Surat	632	23.8	868	9	
	Detachment 21st Regt. N. I.	On Board the Str. "Dalhousie."	8	0.1	22	...							
	Do. do.	On Board Turret "Abyssinia" & "Magdalla"	16	.....	...	...				
	Do. do.	Bassadore	11	2.4	114	1	2nd Co. Native Artillery	Aden	94	2.3	118	1	
	1st Co. Native Artillery	Aden	85	5.3	187	6	5th Regiment N. I.	Do.	628	26.8	822	18	
	5th Regiment N. L. I.	Do.	592	21.4	399	...	2nd Co. Sappers and Miners	Do.	97	3.3	128	1	
	2nd Co. Sappers and Miners	Do.	96	1.4	41	...	Aden Troops	Do.	84	6.0	279	...	
	Aden Troops	Do.	89	7.0	308	...	1 Detachment 5th Regt. N. I.	Perim	50	12.1	65	...	
	Detachment 5th Regt. N. I.	Perim	52	1.7	70	1							
Total...			3,297	144.0	4,731	33	Total...			3,312	143.4	4,215	46

POONA DIVISION.												NORTHERN AND MHOW DIVISIONS.											
1st Regt. L. C.	Poona	450	20.2	648	1	1st Regiment L. C.	Poona.	388	20.8	781	1	3rd Regiment N. I.	Ahmedabad	609	27.4	1,494	5	Total...	8,483	311.9	10,114	46	
1st Grenadier Regt. N. I.	Do.	677	30.6	1,204	6	23rd Regiment N. I.	Do.	643	33.0	912	2	9th do.	Do.	472	14.7	650	3		613	37.7	1,360	9	
2nd do.	Do.	668	28.2	1,020	7	2nd Grenadier Regt. N. I.	Do.	627	25.5	971	4	18th do.	Rajkot	619	17.2	947	3		465	22.3	671	10	
8th do.	Do.	660	33.8	1,493	3	9th Regiment N. I.	Do.	636	12.4	421	4	Squadron 2nd Regiment L. C.	Do.	118	3.4	96	...		627	17.4	828	7	
Detachment Poona Horse	Dhoolia	151	3.2	61	...	Detachment Poona Horse	Dhoolia	150	3.6	75	1	2nd Company Native Artillery.	Do.	122	2.0	111	1		118	2.5	135	2	
17th Regiment N. I.	Do.	613	26.0	807	4	25th Regiment N. I.	Do.	591	31.5	811	6	1st Co. Native Artillery	Do.	121	3.8	111	1		121	3.8	151	1	
Sappers and Miners	Kirkee	407	8.0	296	2	Sappers and Miners	Kirkee	395	10.4	370	6	20th Regiment N. I.	Bhuj	630	53.7	923	2		643	28.6	523	8	
Head Qrs. 15th Regt. N. I.	Malligam	351	8.8	295	3	Head Qrs. 10th Regt. N. I.	Malligam	350	17.0	609	1	2nd do. L. C.	Deesa	301	15.2	634	4		275	7.3	191	3	
6th Regiment N. I.	Belgaum	631	13.3	302	3	1st Grenadier Regt. N. I.	Belgaum	662	11.8	413	3	24th do. N. I.	Do.	619	52.5	2,086	12		623	16.2	643	9	
12th do.	Do.	648	16.0	604	2	12th Regiment N. I.	Do.	609	26.3	798	2	Head Quarter 10th Regt. N. I.	Mhow	494	23.0	881	3		536	20.0	716	7	
Poona Horse	Sirur	205	6.3	194	2	Poona Horse	Sirur	210	4.6	183	0	16th Regiment N. I.	Do.	646	20.7	917	12		545	19.1	588	4	
11th Regiment N. I.	Satara	385	15.8	576	2	11th Regiment N. I.	Satara	362	22.4	788	3	3rd do. L. C.	Neemuch	309	13.8	387	1		271	12.7	327	2	
28th do.	Sholapur	645	33.4	972	7	28th do. N. I.	Sholapur	643	17.0	680	3	22nd do. N. I.	Do.	638	45.5	1,163	6		621	38.3	1,047	2	
13th do.	Ahmadnagar	650	18.8	753	3	16th do. N. I.	Ahmadnagar	690	17.0	754	5	Squadron 3rd Regiment L. C.	Nasirabad	138	5.1	196	1		157	13.0	332	0	
Detachment 11th Regt. N. I.	Asinghar	129	5.0	183	1	Detachment 11th Regt. N. I.	Asinghar	146	4.6	161	2	23rd Regiment N. L. I.	Do.	626	60.9	1,891	6		615	77.2	1,693	11	
7th do.	Dharwar	639	23.3	564	3	7th Regiment N. I.	Dharwar	600	32.3	697	2	Right Wing 25th Reg. N. L. I.	Angur	248	9.2	288	1		248	7.7	345	2	
14th do.	Kolhapur	591	21.2	560	2	17th do.	Kolhapur	702	17.0	573	1	4th Regiment N. I.	Baroda	644	23.1	1,305	1		650	15.0	514	3	
Detachment Poona Horse	Kaladgi	77	7.8	171	...	Detachment Poona Horse	Kaladgi	79	4.7	117	0	Detachment 9th Regt. N. I.	Dwarka	89	0.6	149	...		90	3.0	105	0	
Total...					51	Total...					Total...	8,483	311.9	10,114	46								
3rd Regiment N. I.	Ahmedabad	609	27.4	1,494	5	8th Regiment N. I.	Ahmedabad	613	37.7	1,360	9												
9th do.	Do.	472	14.7	650	3	6th do.	Do.	465	22.3	671	10												
18th do.	Rajkot	619	17.2	947	3	18th do.	Rajkot	627	17.4	828	7												
Squadron 2nd Regiment L. C.	Do.	118	3.4	96	...	Squadron 2nd Regt. L. C.	Do.	118	2.5	135	2												
2nd Company Native Artillery.	Do.	122	2.0	111	1	1st Co. Native Artillery	Do.	121	3.8	151	1												
20th Regiment N. I.	Bhuj	630	53.7	923	2	20th Regiment N. I.	Bhuj	643	28.6	523	8												
2nd do. L. C.	Deesa	301	15.2	634	4	2nd do. L. C.	Deesa	275	7.3	191	3												
24th do. N. I.	Do.	619	52.5	2,086	12	24th do. N. I.	Do.	623	16.2	643	9												
Head Quarter 10th Regt. N. I.	Mhow	494	23.0	881	3	3rd do. N. I.	Mhow	536	20.0	716	7												
16th Regiment N. I.	Do.	646	20.7	917	12	14th do.	Do.	545	19.1	588	4												
3rd do. L. C.	Neemuch	309	13.8	387	1	3rd Regiment N. L. C.	Neemuch	271	12.7	327	2												
22nd do. N. I.	Do.	638	45.5	1,163	6	22nd do. N. I.	Do.	621	38.3	1,047	2												
Squadron 3rd Regiment L. C.	Nasirabad	138	5.1	196	1	Squadron 3rd Regt. L. C.	Nasirabad	157	13.0	332	0												
23rd Regiment N. L. I.	Do.	626	60.9	1,891	6	26th Regiment N. I.	Do.	615	77.2	1,693	11												
Right Wing 25th Reg. N. L. I.	Angur	248	9.2	288	1	Left Wing 15th do.	Angur	248	7.7	345	2												
4th Regiment N. I.	Baroda	644	23.1	1,305	1	4th Regiment N. I.	Baroda	650	15.0	514	3												
Detachment 9th Regt. N. I.	Dwarka	89	0.6	149	...	Detachment 6th Regt. N. I.	Dwarka	90	3.0	105	0												

APPENDIX IV.

COMPARATIVE STATEMENT showing the health of the Native Troops in the four Divisions of the Bombay Presidency.

DIVISIONS.	1872.								1871.							
	Strength.	Admissions.	Deaths.	Daily Sick.	Ratio per cent. of admissions to average strength.	Ratio of Deaths per cent.		Average daily sick per cent. to average strength.	Strength.	Admissions.	Deaths.	Daily Sick.	Ratio per cent. of admissions to average strength.	Ratio of Deaths per cent.		Average daily sick per cent. to average strength.
						To treated.	To strength.							To treated.	To strength.	
Presidency { Bombay Circle. Aden	2,383	3,726	25	108.1	156.3	0.6	1.0	4.4	2,359	2,803	26	92.9	118.7	0.9	1.1	3.9
	914	1,005	8	36.8	109.9	0.7	0.8	3.9	953	1,412	20	50.5	147.0	1.4	2.1	5.2
Poona Division	8,577	10,703	51	319.7	124.7	0.4	0.5	3.7	8,483	10,114	46	311.9	119.6	0.4	0.5	3.6
Northern Division	8,054	15,735	68	427.4	195.3	0.4	0.8	5.2	8,077	11,425	87	372.5	141.4	0.7	1.0	4.6
Sind Division	2,975	5,040	74	148.0	169.4	1.4	2.4	4.9	3,087	3,979	57	162.4	128.8	1.4	1.8	5.2
	22,903	36,209	226	1,040.0	158.09	0.62	0.98	4.54	22,959	29,733	236	990.2	129.5	0.79	1.03	4.31

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SKETCH
OF THE
MEDICAL HISTORY OF THE NATIVE ARMY OF BOMBAY,
FOR THE
YEAR 1872.

EXTRACTED FROM THE ANNUAL RETURNS, FROM THE REPORTS OF REGIMENTAL MEDICAL OFFICERS,
AND FROM THE INSPECTION REPORTS OF DEPUTY SURGEONS GENERAL.

[ALL STATISTICAL INFORMATION IS GIVEN IN THE TABLES AT THE END.]

COMPILED IN THE OFFICE OF THE SURGEON GENERAL, INDIAN MEDICAL DEPARTMENT (BOMBAY).



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